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THE JOURNAL OF LAND & PUBLIC UTILITY ECONOMICS

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1947



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Nonfarm Real Estate Finance†

By DONALD S. THOMPSON*

Importance of Real Estate Lending

NEXT to food, shelter is probably the most fundamental requirement of man. Modern civilization has added clothing to the list of fundamental wants, but primitive man undoubtedly was interested first in food and, second, in shelter. The provision of shelter for housing and for manufacturing, trade and business is, therefore, of utmost importance to the economic system. Similarly, the financing of this shelter constitutes one of the most important fields of finance.

At the close of June 1946, the volume of obligations secured by real estate mortgages amounted to more than \$38 billion, or more than one-fourth of all private debts in the land. As of the close of the year it probably exceeded \$40 billion. The total amount of interest paid on this mortgage debt at the present time probably

ranges from \$1 ½ to \$2 billion per annum. Most of the mortgage debt is held by private lenders. Of the \$38 billion on June 30, 1946, the commercial banks held nearly \$6 billion or about 11 percent, while life insurance companies and building and loan associations each held about \$6 ½ billion or about 17 percent. About \$2 ½ billion of the mortgage obligations was held by federal agencies, chiefly the Federal Land Bank and the Home Owners Loan Corporation.

Of the \$38 billion of mortgages, about \$5 billion was on farm land and the remainder, about \$33 billion, was on non-farm properties.

Development of Present Situation

From 1940 to 1945 the number of occupied nonfarm dwelling units increased by 3 ½ million, or an average of about 630,000 units per year. This compares with an average increase of about

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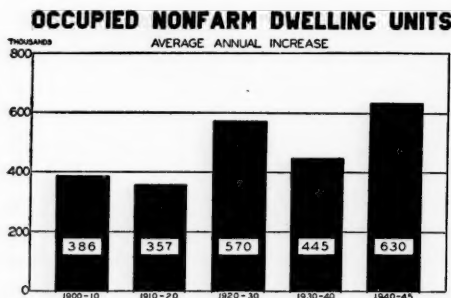
450,000 per year in occupied nonfarm dwelling units during the decade of the Thirties and an average of less than 600,000 per year during the decade of the Twenties. The figures are shown in the following table and accompanying chart:

TABLE I—OCCUPIED DWELLING UNITS†
(in thousands)

Year	Total	Nonfarm	Farm
1900.....	15,964	10,274	5,690
1910.....	20,256	14,132	6,124
1920.....	24,352	17,600	6,751
1930.....	29,905	23,300	6,605
1940.....	34,855	27,748	7,107
1945.....	37,600	31,281	6,319

Source: Bureau of Census, *Statistical Abstract 1944-45*, p. 910; Housing Census, 1940, Volume II, Part 1, United States Summary, Table II, p. 3; and *Special Reports*, Series H-46, No. 1.

†These data are not strictly comparable throughout the entire period but they probably give a fair indication of the trend.



The data for 1945 are based on a sample survey and are subject to the errors of sampling which for totals are probably not unduly large. They show that the supply of dwelling units was increased during the five-year rearmament and war period at a more rapid rate than during any preceding decade of the twentieth century. Notwithstanding the record-breaking increase in supply, the improvement in quality of dwelling units through completion of major repairs, and the induction into the armed forces of about 12,000,000 persons, a severe housing shortage developed which, by the

close of 1945, had become almost the major political issue of the day. Many returning veterans have experienced difficulty in finding places in which to establish homes, and urban real estate prices have been rising.

The development of this shortage during a record-breaking expansion in the number of occupied dwelling units may be attributed to five closely related factors: (1) An unprecedented growth of incomes. (2) A "spreading out" or "thinning out" of families among the available dwelling units, a trend made possible by higher incomes. (3) An increased rate of family formation. (4) The character of rental and housing controls imposed as a wartime necessity. (5) The ready availability of relatively cheap money for financing the purchase of real estate.

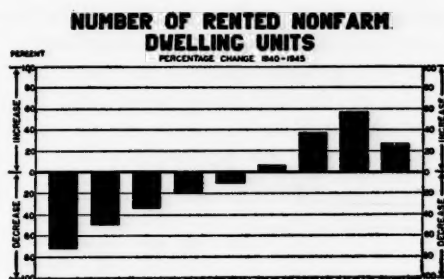
Unprecedented Growth in Incomes. In 1940, income payments to individuals amounted to about \$76 billion. The volume of income payments increased sharply each year thereafter until it reached the level of \$160 billion in 1945, double that of 1940. Even though taxes also increased and a much higher proportion of income was put into savings during the war years, consumers' disbursements for goods and services including housing and shelter (but not repayment of mortgage debts) increased by 60 percent or from about \$65 billion in 1940 to about \$105 billion in 1945. During 1946, consumer expenditures were higher than in any other year of record, increasing further the pressure on available housing.

The growth in incomes appears to have been general throughout the income scale. Individuals who generally have very low incomes received larger incomes and those farther up the income scales also received much larger incomes. While the data are not too reliable, nonetheless it appears pretty clear that fewer

persons or family units received low incomes while the number receiving incomes in excess of \$2,000-\$3,000 increased.

Spreading Out of Families. This expansion in incomes occurred at a time when the supply of consumer goods and services was restricted, when supplies were rationed, and when prices of most consumers' goods were controlled and rents were frozen. As a consequence, those who received higher incomes had more money to spend on housing and sought better accommodations than they had heretofore been able to afford. There was a reduction in the number of tenant-occupied low-rental units and an increase in the number of tenant-occupied high rental units. The changes are shown in the following table and accompanying chart.

The table and chart show reductions in the number of units renting for less than \$25, whereas gains occurred in the number renting for \$25 or more. Furthermore, the decreases recorded in the number of units under \$25 were particu-



larly sharp in the lowest rental categories. In the over-\$25 brackets, the largest gains occurred in the \$40-\$49 classification.

The largest number of units in any class was in the group renting for \$30-\$39. Nearly one-fourth of all rental units was in this class and the number showed an increase of 37 percent over 1940.

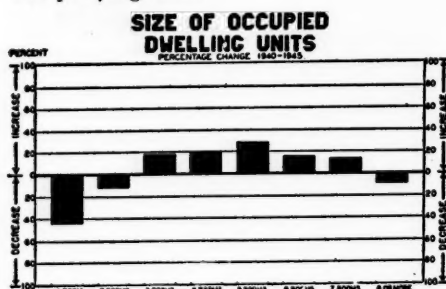
People not only demanded more expensive places in which to live; they also demanded more space and put fewer persons in that space. One- and two-room units were reduced sharply in number (by $\frac{3}{4}$ million) while the number of 3, 4, 5, and 6-room units increased

TABLE II.—DISTRIBUTION OF TENANT-OCCUPIED URBAN AND RURAL NONFARM DWELLING UNITS ACCORDING TO CONTRACT MONTHLY RENT:—1945 AND 1940

	Estimated Number		Increase, 1940-1945		Percent	
	1945	1940	Number	Percent	1945	1940
TOTAL	15,403,000	16,335,000	-932,000	-5.7	100.0	100.0
<i>Unit with Monthly Rent of:</i>						
Under \$5	251,000	900,000	-649,000	-72.1	1.6	5.5
\$5 to \$9	991,000	1,962,000	-971,000	-49.5	6.4	12.0
\$10 to \$14	1,518,000	2,305,000	-787,000	-34.1	9.9	14.1
\$15 to \$19	1,790,000	2,238,000	-448,000	-20.0	11.6	13.7
\$20 to \$24	1,812,000	2,031,000	-219,000	-10.8	11.8	12.4
\$25 to \$29	1,979,000	1,854,000	125,000	6.7	12.8	11.3
\$30 to \$39	3,488,000	2,546,000	942,000	37.0	22.6	15.6
\$40 to \$49	2,066,000	1,310,000	756,000	57.7	13.4	8.0
\$50 or more	1,508,000	1,189,000	319,000	26.8	9.8	7.3

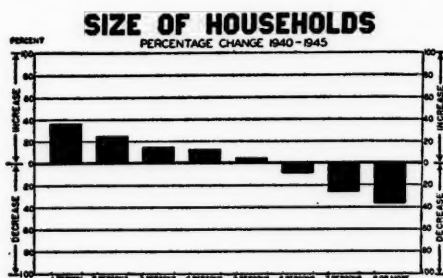
Source: Bureau of the Census, *Special Reports, Housing*, Series H-46, No. 1, Table 13.

substantially (4 million). This includes both owner-occupied and tenant-occupied or rented units. The data are shown in the following table and accompanying chart.



The number of persons per dwelling unit was reduced. The number of units occupied by one or two persons increased sharply (about 30%—that was an increase of more than 2½ million units). The number occupied by three and four persons increased by 14 percent or 1½ million while the number occupied by six or more persons declined substantially,

22% or 800,000 units). The data are shown in the following table and in the accompanying chart.



As a result of these changes in occupancy of existing dwelling units available, space was used much less intensively at the close of 1945 than in prewar years. From 1940 to 1945, there was an increase of 36 percent, or more than 3 million, in the number of dwelling units with ½ or less persons per room. These units constituted 2/5 of all occupied dwelling units. Eighty-seven percent of all occupied

TABLE III.—DISTRIBUTION OF OCCUPIED URBAN AND RURAL NONFARM DWELLING UNITS BY NUMBER OF ROOMS:—1945 AND 1940

	Estimated Number		Increase, 1940-1945		Percent	
	1945	1940	Number	Percent	1945	1940
TOTAL	31,281,000	27,748,000	3,533,000	12.7	100.0	100.0
<i>Number of Rooms in Unit:</i>						
1 room.....	560,000	994,000	-434,000	-43.7	1.79	3.58
2 rooms.....	2,009,000	2,288,000	-279,000	-12.2	6.42	8.25
3 rooms.....	4,622,000	3,909,000	713,000	18.2	14.77	14.08
4 rooms.....	6,064,000	5,055,000	1,009,000	20.0	19.38	18.22
5 rooms.....	7,573,000	5,908,000	1,665,000	28.2	24.20	21.29
6 rooms.....	5,888,000	5,094,000	794,000	15.6	18.82	18.36
7 rooms.....	2,399,000	2,129,000	270,000	12.7	7.67	7.67
8 or more.....	2,166,000	2,371,000	-205,000	-8.7	6.92	8.54

Source: Bureau of the Census, *Special Reports, Housing*, Series H-46, No. 1, Table 11.

TABLE IV.—DISTRIBUTION OF OCCUPIED URBAN AND RURAL NONFARM DWELLING UNITS BY SIZE OF HOUSEHOLD: 1945 AND 1940

	Estimated Number		Increase, 1940-1945		Percent	
	1945	1940	Number	Percent	1945	1940
TOTAL	31,281,000	27,748,000	3,533,000	12.7	100.0	100.0
<i>Number of Persons in Household:</i>						
1 person.....	3,158,000	2,316,000	842,000	36.3	10.1	8.3
2 persons.....	9,044,000	7,242,000	1,802,000	24.8	28.9	26.1
3 persons.....	7,330,000	6,383,000	947,000	14.8	23.4	23.0
4 persons.....	5,693,000	5,063,000	630,000	12.4	18.2	18.3
5 persons.....	3,198,000	3,066,000	132,000	4.3	10.2	11.1
6 persons.....	1,522,000	1,704,000	-182,000	-10.7	4.9	6.1
7 persons.....	672,000	912,000	-240,000	-26.3	2.2	3.3
8 or more.....	664,000	1,062,000	-398,000	-37.5	2.1	3.8

Source: Bureau of the Census, *Special Reports, Housing*, Series H-46, No. 1, Table 10.

dwelling units were occupied by one or less persons per room. All of the increase in dwelling units was in those occupied by one or less persons per room. These units increased by $4\frac{1}{2}$ million. The number of dwelling units occupied by more than one person per room was reduced by one million. The figures are presented in the following table and the changes are shown in the accompanying chart.

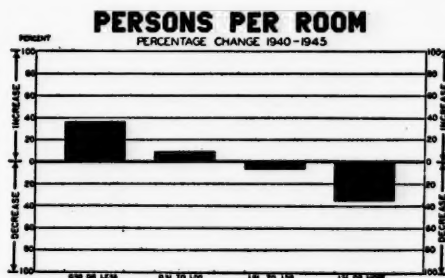


TABLE V.—DISTRIBUTION OF OCCUPIED URBAN AND RURAL NONFARM DWELLING UNITS ACCORDING TO NUMBER OF PERSONS PER ROOM: 1945 AND 1940

	Estimated Number		Increase, 1940-1945		Percent	
	1945	1940	Number	Percent	1945	1940
TOTAL	31,281,000	27,748,000	3,533,000	12.7	100.0	100.0
<i>Number of Persons per Room:</i>						
0.50 or less.....	12,109,000	8,888,000	3,221,000	36.23	38.71	32.03
0.51 to 1.00.....	15,197,000	13,972,000	1,225,000	8.76	48.58	50.35
1.01 to 1.50.....	2,712,000	2,908,000	-196,000	-6.75	8.67	10.48
1.51 or more.....	1,263,000	1,980,000	-717,000	-36.22	4.04	7.14

Source: Bureau of the Census, *Special Reports, Housing*, Series H-46, No. 1, Table 12.

The spreading out reflected in part the ability of many families, members of which had been inducted into the armed services, to maintain themselves in their original quarters, and in part a tendency of some to maintain dwellings in more than one place because of their war work. It also reflected the efforts of many whose incomes had increased to improve their standards of living. The return of veterans to civilian life and the release of others from war work during 1946 served on the one hand to increase again the rate of intensity of occupancy and, on the other, to increase substantially the demand for additional housing, and the price rise in urban real estate which had been substantial during the war was accelerated.

Increased Rate of Family Formation. Unfortunately, statistical data are not available to show the real rate of family formation but the weight of opinion and of evidence indicates that the rate of family formation has been much higher since 1940 than in the preceding two decades. While not all new families formed seek separate dwelling units, an increase in the number of families would accentuate the demand for housing. New families are generally small in size. An unusual increase in their number therefore would tend to contribute to the spreading out or thinning out noted above.

Character of Rental and Housing Controls. Population shifts accompanying industrial conversion to a wartime basis, coupled with expanding incomes and purchasing power, had increased the demand for housing accommodations during the war.

Several alternatives were available for allocating the existing supply of housing of which the following represented the two extremes:

(1). Rents could have been left free to rise

until they absorbed the ability of people to pay more so that everyone would have found shelter at some price. Concurrently with this, of course, real estate prices would have been left free to rise. This would have been the traditional method of allocating resources through the price mechanism. The objection to this device was that it would have led to competitive bidding for resources needed in the war effort. Some form of housing control was necessary in order to prevent an undue diversion of productive resources from war purposes to housing. Construction was therefore controlled by a system of priorities.

(2) At the opposite extreme rents and sales prices could have been controlled and the existing supply of dwellings could have been rationed to assure the housing of the population.

Actually neither of these extreme but logically consistent courses was taken. The nature of the compromises adopted has resulted in a real estate boom of record proportions. Rents were controlled, but people with higher incomes were left free to seek more spacious quarters.

The resulting pressure on facilities led to increased demand for nonrental housing. While rents were controlled, sales and sales prices were not, and prices of nonrental properties increased. Advancing prices for real estate coupled with rigid rent controls led to the sale of properties heretofore held for rent as investment property. As a consequence, the supply of rental units was reduced. While the total number of occupied non-farm dwelling units increased from 1940 to 1945 by 3,500,000 the number occupied by tenants was actually reduced by 932,000, while the number occupied by owners increased by nearly 4,500,000. The proportion of dwelling units that were owner-occupied has increased from about 40 percent in 1940 to over 50 percent in 1945 while the proportion occupied by tenants has been reduced from about 60 percent to less than 50 percent.

The rigid pattern of rent controls has served to discourage postwar building of multi-family structures, which are the most effective means of dealing with a housing shortage. Most of the demand is also for rental housing but most of the new housing appears to have been for owner occupancy.

Finally, the initiation in 1945 and early 1946 of an overly ambitious building program in terms of existing material and personnel exhausted our short supplies on numerous starts which now remain unfinished so that the stock of completed dwelling units now available is smaller than would have been the case had it been possible to undertake a more restrained program conceived in terms of ability to complete units.

Availability of Cheap Money. The expansion of deposits and savings resulting primarily from deficit financing placed mortgage lenders in supply of large quantities of funds to invest.

As of today, nongovernment institutional lenders alone have a mortgage-lending capacity at least double their actual holdings and would gladly expand their portfolios if they thought they could do so with a reasonable expectation of getting their money back sometime or other. At the same time, federal insurance and guaranty provisions for reducing the risk of mortgage lending have been liberalized. The G. I. Bill of Rights has been enacted with guaranty provisions to help veterans acquire homes.

These developments have driven interest rates on mortgage loans down and increased further the already expanded purchasing power available for expenditures on shelter. This purchasing power has been increased not only by the expansion in incomes and the reduction in interest rates, but also by a lengthening of maturities necessitating smaller payments for debt service. Put in other

terms, consumers have been able to capitalize their monthly expenditures into larger and larger amounts.

The Present Situation

These forces have generated a real estate boom of record proportions and unique characteristics. The boom has been accompanied by a very high level of building activity as measured by starts but a very low level of output as measured by completions. More than one million dwelling units were started during 1946. That figure includes conventional houses, factory-built houses, trailers, and structures to be reconditioned or remodeled for use as dwellings including temporary re-use. While the number of permanent units started was less in 1946 than in 1925, the peak year of the 1920 boom, the number of permanent and temporary units started appears to have been higher in 1946 than in any other year. The number of completions, however, was only about 650,000 for 1946. A large number, possibly one-fifth or more, of these completions represented starts in 1945.

Apparently in housing as in other industries, we have been accumulating a sizable inventory of "goods in process." The number of units of all types now in process probably exceeds 500,000 and might be as high as 800,000. Many of these units have been in process for some time. In housing this becomes a very costly inventory. One wonders what might happen to the present boom market where houses are selling at substantially above replacement costs if building materials were to become plentiful and these many partly-built structures were to be completed and to come onto the market in a relatively short space of time. In such a circumstance, *completion* in one year of 1 1/2 million or more dwelling units

at costs well below current selling prices would not appear to be too improbable.

The present boom market is also characterized by a higher level of real estate transfers than ever before recorded; by sharply advancing prices; and by a rapid expansion in mortgage debt at a time when the supply of properties is expanding very slowly.

The expansion in nonfarm real estate debt has been more rapid in 1946 than in any other year on record. This growth in debt without a corresponding increase in new properties to be financed can mean only one thing—*people are taking their money out of nonfarm real estate and the lenders are putting it in.*

People are buying real estate; but they are borrowing to do it. The persons to whom they pay the money are taking that money out of real estate. The seller may put his money back into real estate, but that only means that someone else takes the money out. While some of the money may be used to pay off a previous mortgage, if the total of mortgage debt outstanding increases, the money is being taken out of real estate by investors more rapidly than it is being put in. Under such circumstances the lenders are assuming greater and greater proportions of the risks.

If the expansion in mortgage loans accompanies the financing of new properties, the money that is "taken out" of real estate is used directly to pay for wages, for materials and for the enterprising effort that produced the structures. However, when the expansion in loans is predicated upon transfers of existing properties at ever higher prices, the money that is "taken out" of real estate is not used directly for productive purposes. The real wealth of the nation has not been increased, but the lenders' risk has.

It is difficult to measure the extent of price advances of nonfarm real estate.

Costs of construction are higher now than they were in the Twenties and four- to eight-room houses generally have been selling at prices substantially above replacement costs less depreciation. The greatest rise in prices has been in the class of home that could qualify for purchase by veterans under provisions of the G. I. Bill of Rights. When the supply of dwelling units increases or the demand for housing decreases, these prices will decline to the level of reproduction costs and ultimately, because of the character of much of the construction of these smaller units, may go to fairly substantial discounts below reproduction costs of new similar-sized units. Larger, more expensive structures have not participated in the boom to the extent characteristic of the smaller structures.

I do not pretend to have enumerated all of the factors contributing to the present situation. I do think, however, that those we have just reviewed are the most important ones. They explain why the proportion of dwelling units that are owner-occupied has increased from about 40 per cent in 1940 to over 50 percent in 1945 while the proportion occupied by tenants has been reduced from about 60 percent to less than 50 percent, and why prices for existing houses have risen so sharply over the past five or six years.

Costs, Risks, and Yields

What is the position of the mortgage lender today? Just what does he get for his money? Today, characteristically, he is making loans on an amortized basis for periods of from 10 to 20 years, with interest at 4 percent to 4½ or even 5 percent, and with or without provision for mortgage insurance or a partial government guaranty.

How much does it cost a lender to put these loans on his books and to service them? What risks is he assuming and

what allowance should he make for those risks? Very little is known about costs, about risks, and about actual yield experience. Many lenders have painful memories of sad experience. A few have reduced that experience to quantitative terms and can tell us what their rate of loss has been over a period of years. And a few have data regarding their costs. But almost no information of this type is available publicly. The National Bureau of Economics Research is currently engaged in such a study but it will be some time before the results of their analyses are available.

Fragmentary information indicates that some lenders have found that total costs (including acquisition, servicing, delinquency and foreclosure costs, and bad debt losses) have ranged between $1\frac{1}{4}$ percent and $1\frac{1}{2}$ percent over a period of years. These figures are not presented as averages for the mortgage lending business or as forecasts from the future. They are merely figures which represent the experience of some lenders. The figures, incidentally, do not include the costs of getting the money to lend. In banks, of course, these latter costs would represent the net cost of servicing deposit accounts and the amount of interest, if any, paid on deposits. In savings and loan associations, they would include cost of handling share accounts and rates of dividends paid; what the comparable costs are for insurance companies, I do not know.

Using the $1\frac{1}{4}$ percent to $1\frac{1}{2}$ percent figures for illustration, a $4\frac{1}{2}$ percent mortgage would, on the average, provide a net yield of perhaps slightly over 3 percent while a 4 percent mortgage would provide an average net yield of slightly over $2\frac{1}{2}$ percent. Of course, lending practices may have improved sufficiently so that losses will be less than heretofore. Lenders may succeed in avoiding the consequences of the present inflation in

real estate. This has not been accomplished in the past. It is doubtful if it will be accomplished this time. If lenders are more successful this time it will be due to the following: (1) Widespread use of amortization. (2) Improved appraisal and lending practices. (3) Mortgage insurance and other government guaranties or expectations of government financial support. (4) Maintenance of greater economic stability than heretofore.

1. *Amortization.* The practice of amortizing mortgage loans is now widespread, whereas in the Twenties and the early Thirties it was the exception rather than the rule among lenders other than building and loan associations. Amortization undoubtedly does reduce risk but does not appear to be sufficient in itself to assure avoidance of difficulties. The building and loan associations which used the amortized loan in the Twenties did not escape trouble in the Thirties. The bulk of the loans in institutional hands in the early Thirties had been made within the five years immediately preceding the onset of difficulties. If these loans had had an average maturity of 15 years, the reduction in principal would have averaged about 20 or 25 percent. Those loans were made generally at 50, 60, and $66\frac{2}{3}$ percent of appraisal in the Twenties.

During the present boom loan repayments have been so accelerated that loans have been turning over at a three-to-five-year rate. This rapid rate of payment may be attributed to a number of factors of which four may be enumerated:

- (a) Sales of properties with resulting payoff or transfer of mortgage. This does not appear to be very important and is, of course, offset by the new loans extended to the buyers of the properties.
- (b) Payment of temporary borrowing used to finance real estate transfers. It is not uncommon for a purchaser to buy a house be-

fore he sells his currently-held property. In such a case he finds it necessary to contract an unusually large mortgage loan to finance the purchase before receipt of proceeds from sale of the previously-held property. The proceeds are deposited with the lender (usually within 30 to 60 days) for liquidation of the excessive part of the loan and the borrower is left with a more customary mortgage debt.

- (c) High levels of income and a shortage of other goods to compete for the consumer's dollar. The slowness with which household equipment and other durable goods became available in 1946 was a disappointment to many. It is possible that some savings and incomes originally intended for expenditure on durable goods have been used to reduce mortgage debt either because the expected article did not materialize, or because of the inflation in prices. When the supply of consumer's goods increases, purchases of those goods can be expected to increase, and accelerated payments on mortgages to diminish.
- (d) Ability of many individuals to maintain their savings at an unusually high rate, giving effect to such savings through more rapid debt retirement rather than through continued purchases of "E" bonds in large amounts.

2. *Improved Appraisal and Lending Practices.* Appraisal and lending practices are believed to be better today than in previous booms. More consideration is being given to location and neighborhood trends, to reproduction costs, to the sources of funds for repayment of debt, and to the ability of borrowers to meet their obligations. Present tendencies in lending practices, however, raise some questions with respect to risk in mortgage lending. If credit is extended more liberally because of better appraisals, what is the combined effect on risk of loss today as compared with earlier periods? If loans are made on an amortized basis for a higher proportion of the value of a presumably more accurately appraised property and for longer maturities with consequent slower rates of payoff, what is the combined effect of these changes on risk?

3. *Mortgage Insurance and Other Govern-*

ment Guaranties or Expectations of Government Financial Support. Approximately 25 percent of the nonfarm mortgage debt on one-to-four-family residential structures held by institutional lenders is protected by FHA insurance or by Veterans Administration guaranties. This represents protection against loss. Such insurance reduces the hazard of concentration of risk to the individual lender. The insurance premium required on FHA loans forces the lender and the borrower to recognize the possibility of risk by setting aside a small sum to pay losses.

Insurance and government guaranties reduce the direct risk borne by the lender. They do not, however, eliminate or reduce the over-all risk of mortgage financing. The FHA mutual mortgage insurance plan has been very successful over the past twelve years, a period in which the ability of debtors to pay debts has improved almost continuously. It may be observed that very few mortgage loans went into default between 1923 and 1929.

While government guaranties may reduce the direct risk borne by each lender, they may actually increase the risk or hazard of private finance generally. Should the government be called upon to make good those guaranties and thus protect the financial system from losses resulting from that system's mistakes, while individual borrowers, many of them veterans, were sustaining heavy losses, the political repercussions might be serious. A financial system that substitutes government guaranties for sound lending practices, collects income and profits on its loans but transfers losses to the government, may not survive as private enterprise.

I am not saying that loans should not be made under the guaranty system. I am suggesting, however, that standards of sound lending should apply, with or without government guaranty. In the case of

veterans' loans, it can not be emphasized too strongly that the veterans are not benefited if, because of the guaranty, lenders encourage them to assume obligations they can not meet.

4. *Economic Stability in the Nation.* Economic fluctuations and the instability which accompanies them are the most important factors affecting mortgage loan experience. Shelter costs and property operating costs are for the most part relatively stable. Such items as interest, amortization, taxes, utilities and heating vary but little. Cost of services, maintenance, and repairs fluctuates somewhat more. Consumer incomes and rents, however, out of which must be paid shelter costs, fluctuate considerably. Consumer costs or prices for such items as food, clothing, and other essentials also fluctuate considerably. A decline in incomes and rents could affect adversely the ability of borrowers to meet their obligations. A decline in incomes could lead to doubling-up of families, reducing the demand for housing, relieving the existing shortage and could thus precipitate a sharp decline in real estate prices. An increase in other consumer prices or costs might have a similar effect.

Higher rents might result in more intensive use of existing space, thus reducing the pressure on existing housing facilities. Higher rents would also affect the family budget. Should increased expenditure on rent exceed anticipated reductions in expenditures for food, the demand for other products might be reduced with adverse effects on the business situation and on employment and with a consequent reduction in level of incomes.

What Are Lenders Betting On?

The points that have been made can be summarized briefly in the form of an analysis of the question, "What are

lenders betting on when they make the kind of mortgage loans they do today?"

An over-all look indicates that lenders are making the following bets with respect to the next 3 to 5 years:

1. That the volume of funds available for expenditure by consumers on shelter costs, including interest, amortization, rent, heat, utilities, taxes, maintenance, and repairs, will not decline significantly.
2. That the tendency to spread out will not be reversed.
3. That the recently increased ratio of owner occupancy to rental occupancy will hold.
4. That building will continue to accelerate slowly.
5. That, consequently, the housing shortage will be eliminated slowly.
6. That building costs will not decline rapidly or to any important extent.
7. That present trends of neighborhood change will not be seriously altered.
8. That real estate values generally will not decline by an amount sufficient to reduce owner's equities to dangerously low levels.

The record with regard to the financing of nonfarm real estate will depend chiefly on the future course of employment, incomes, construction, housing costs, and other consumer expenditures. A decline in employment and incomes can reduce the ability of consumers to maintain housing expenditures and can bring about a sufficient amount of doubling-up to alleviate the housing shortage and cause declines in real estate prices. Such a development might jeopardize loans made on the basis of scarcity value. The maintenance of a high level of construction will tend to sustain employment and incomes and bring about a more gradual elimination of the housing shortage and of the scarcity premiums on existing housing. Increases in rent and in other consumer prices and costs will affect adversely the demand for housing

and may tend to reduce the premium on existing housing. Loans that involve commitments that borrowers can meet out of incomes only with severe sacrifice will in general be the first to get into difficulties.

From the lenders' point of view, success in dealing with adverse developments will depend on the efficacy of policies followed on loans which get into trouble and on the extent to which lenders have made provision for absorbing losses. The ability of lenders to absorb losses is dependent on their capital and on the extent to which reserves are accumulated during good times to meet the losses which must be taken during bad times. The regular setting aside of a part of interest income as a reserve for losses is a recognition that a part of the charge for the use of money is a premium for risk. Formal accounting anticipation of the losses inherent in the risks of financing

increases a lender's ability to meet those losses when they occur.

The manner in which lenders deal with borrowers who during periods of adversity may have difficulty in meeting their obligations in full, and the manner in which lenders handle the real estate which they find necessary to take over, will affect market developments and influence the course of any general business recession which may occur. To the extent that temporary modifications and adjustments are feasible, the interests of both borrowers and lenders can be protected, forced liquidation with its attendant losses avoided, and human suffering alleviated. Where properties must be taken over, the skill with which liquidations are handled so as to avoid accumulative market pressures during the most adverse periods will have an important bearing on the welfare of finance and business in the community.

The Rise and Fall of the Public Utility Concept

By HOWARD R. SMITH*

I

R. H. TAWNEY, among others, has very well expressed the problem of the contemporary historian.

"The student can observe the results which these cataclysms produce, but he can hardly without presumption attempt to appraise them, for it is at the fire which they kindled that his small taper has been lit Posterity still stands too near their source to discern the ocean into which these streams will flow."¹

This is not to say that the evolution of the public utility concept is a cataclysm in the sense in which Professor Tawney uses the term, but it is true that the historical nexus in which this concept plays an important part has a profound significance for even the present generation.

It is a well-known fact among students of regulation that no fully satisfactory definition of a public utility has ever been developed although there have been numerous presentations of adequately workable notions of the content of this legal, economic, and social phenomenon. The writer has no illusions that a fully satisfactory definition can be derived, particularly within the confines of one brief paper. An attempt will be made rather to explain why a wholly self-contained definition has never been forthcoming, and, as a part of that explanation, how the public utility concept was and is able to perform such an important function within our society without stimulating among contemporaries either a full or a precise awareness of its significance.

A preliminary answer to the questions that are later to be discussed more fully is

as follows: The public utility concept developed out of the inner mechanism that makes up the social process, and not primarily out of the deliberate aspects of social organization. Thus the significance of the public utility lay in the institutional service it performed and not in the intellectual excellence of its standards and tools. For the most solidly integrated adjustments—whether of the individual or society—are unconscious orientations to the persistent elements in living, and this solidity of integration is not materially affected by the existence therein of intellectual inconsistencies.² The social organism is typically pragmatic in that institutions are alive and active because they are successful rather than because they are perfect. The organism itself fills in any small gap resulting from inconsistency by a selective attunement of its own responses, thereby furnishing a subjective shock-absorber that operates to compensate for minor shortcomings in the objective environment.

Stated in these terms it seems highly probable that the reason a wholly consistent definition of a public utility was never found was (is) because it is not a wholly consistent social concept. In the matter of such broad group significance, touching as it did (does) some of the very roots of social organization, contemporary writers have themselves been too precisely attuned to the social nexus in which the utility concept arose to satisfactorily dissect this element from the broader whole. Thus the preliminary answer to both of the questions raised above indicates clearly the interrelatedness of

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¹ *Religion and the Rise of Capitalism* (London: John Murray Pub., 1926), p. 277.

² Talcott Parsons, *The Structure of Social Action* (New York: McGraw-Hill, 1937).

the problem of which each refers to an integral part; i.e., the fact that a fully satisfactory definition has not been found has precisely the same meaning, broadly interpreted, as the fact that the utility concept has performed an excellent service without the benefit of a satisfactory definition.³ The one is the exact converse of the other, and both will be expected to share heavily in the burden of coping with the larger problem suggested by the title of this paper.

The first approach, then, to the problem of the early failure of capitalist society to comprehend the content of the public utility concept is that as an institutional tool it was sufficiently successful not to occasion painstaking dissection. Although it is true that *Munn v. Illinois* did stimulate a storm of controversy, this controversy was rather limited in scope due to the overwhelming acceptance of a very limited regulation. This overwhelming acceptance can be variously demonstrated. The step taken represented such an obvious reversal of traditional *laissez faire* that it could not have been undertaken without solid institutional support. Second, familiarity with the history of the Supreme Court in relation to contemporary social problems teaches that simultaneous agreement by both legislature and courts is adequate proof of virtually unanimous approval. And third, it would have been impossible for there to have arisen any very substantial opposition even from the business side of society since the concept was so definitely limited that it could not represent a real threat to more than the minutest fraction of industry. Certainly the extent to which the concept was taken could not have been foreseen in the context of 1877.

³ The general conclusion to which students of regulation have typically come in summarizing the attempt at definition is that "a utility is what the courts say it is."

Thus it was that the public utility concept was not objectively understood at first because there existed no adequate stimulus for understanding. Unfortunately, however, its entire history was not to be so happy from the standpoint of success. The principal reason is that the concept immediately began to expand its coverage. This development made unified opposition easier because through it the concept began to multiply in terms of threat to industry. In addition, as soon as other industries were added to the list of utility businesses, the most obvious source of homogeneity for purposes of definition—inclusion of a single industry—promptly disappeared. Thus, while the concept still performs an important and necessary function it was not able to retain its position in the background of the conscious social process. As a consequence a vast literature developed having as its underlying purpose the setting of theoretical and practical limits to the working out of this social phenomenon.

The reason for the necessity of setting limits can be clearly seen. As a definitely limited concept the public utility approach to regulation constituted little threat to industry as a whole. It therefore was essential to seek for factors of homogeneity between industries designated as utilities, for in homogeneity the entire pattern of prospective development could be envisaged and concrete limits assessed to the threat involved.

The success of this attempt to raise the utility idea to the conscious level was quite limited. No sooner was a definition derived that seemed sufficiently comprehensive to include all known utilities than another industry was so designated. Each time this happened a new principle of homogeneity had to be sought. Each such new attempt resulted in progressive discouragement, for not only was each

successive definition more difficult to derive but each one became clearly more futile. This does not mean, of course, that there was at any time a tendency for the search to slacken. It does mean, however, that it did tend to become more and more of an academic exercise rather than a highly practical investigation.

It is clear from the above that failure to fully understand the public utility concept is not to be explained solely in terms of an historical epoch in which it was almost completely successful. Long after the passage of that epoch the failure of comprehension persisted. To account for this persistence very briefly suffice it to say at this point that public utility regulation as it matured represented so deep and profound an alteration in the underlying structure of society that the contemporary must naturally have felt quite frustrated in attempting to see it as a whole. Public utility regulation was but the beginning of a total process the end of which men can yet see but dimly if at all—a process in which the most basic elements of accepted social life are undergoing vital changes. Private property, employer-employee relationships, individualism, and others equally significant are among the social configurations that are sharing mightily in these changes.

Before attempting a more complete discussion of the evolution of the public utility concept one further introductory observation is necessary. The title selected for this paper suggests quite openly that this concept is today of less significance than formerly. It is obvious, of course, that it is not meant to imply thereby that there are progressively fewer utility industries or that such industries are of lesser significance from any qualitative point of view. Rather the reference to the "fall" of the public utility concept is intended to have a much different connotation, a connotation that can be ex-

pressed in two distinct ways. In the first place, it is suggested that the term utility in the regulatory sense is used today to cover so wide a field as to belie the limited content from which its major usefulness has always stemmed. In the second place, whereas utility regulation was originally the only significant approach of our society to regulation there are now other approaches. The approach through the utility concept has become so broad that it is rapidly merging with and becoming indistinguishable from these other approaches. For these two reasons it seems appropriate to think of the public utility designation in terms of a declining significance. The plan of the remainder of this presentation is built around a further elaboration of this idea in the context of the other ideas suggested in this preface.

II

While it is true, generally speaking, that one of the great pillars of capitalist ideology is an abhorrence of government, there is one important sense in which this emphasis is quite lacking in meaning. Deep institutional complexes do not exist on an either-or basis. The content of an institution consists of specific elements proportioned to each other in such a way as to produce an approved net result—this result being noticeably different from any one of a number of results that might be achieved through the use of the same basic ingredients mixed a little differently. Thus an institutional content is a matter of degree over an exceedingly wide range; and variations in content become variations of kind rather than degree imperceptibly and only after a certain point is reached.

It is for this reason that it is more usual to refer to the approach of capitalist ideology to government as a belief in a minimum amount of government rather

than as an abhorrence of all government.⁴ On the one hand government was considered necessary to lay down and enforce rules of the business game. On the other hand the help of government was frequently solicited for certain tasks that business desired to have performed but which were too large for accomplishment by a group smaller or less powerful than the government. These two uses for government, it is clear, are themselves capable of vast expansion or contraction within the limits set. There is no single intensity for promulgation and enforcement of business rules. There is, too, no objective single degree of aid that private citizens are justified in soliciting from government. These two elements of the approach of government, therefore, do not at all define this approach. They only set the stage for a definition and at the same time emphasize that there can be a wide range of real approaches through these elements before the position of government becomes different in kind.

Discarding, then, the either-or technique in discussing business and government, a substitute concept is necessary. What the world of American capitalism actually sought was a set of precepts according to which government as a restrictive entity would be kept *on the defensive*, while at the same time government as an ally would not be discouraged.⁵ It follows that the real contribution of the public utility concept to economic, political and social development in this country lay precisely in the manner in which it operated to keep restrictive control on the defensive while at the same time allowing overt recognition of the necessity for some such control.⁶ And it was

⁴ The Jeffersonian expression "the best government is the least government," in short, was never meant to imply that perfect government is no government.

⁵ This statement does not mean, of course, that social concepts are sought on the conscious level. Rather the unconscious value orientations of men tend to arrange the setting for thought processes in such a way that solutions favorable to these values are most likely to be forthcoming.

able to make this contribution by being a strictly limited concept and by being very exclusive in its inclusions. It follows that when it lost these allied characteristics it could no longer make an equivalent contribution.

Law or regulation is an attempt by the community to protect its values. In the typical case, therefore, law is the imposition of the will of the community (through force if necessary) upon a minority which by its actions has indicated a tendency to live outside the area of proper behavior implicit in community ideals. It is not at all strange that, where an important community ideal was equality of opportunity, a first legal principle needing to be set forth was a principle of principles. If the individual (enterprise) was to be the vital element in society it was imperative that the rules of the game be known. This thesis, clearly designed to place restrictive control on the defensive, is most specifically expressed in the constitutional provisions against *ex post facto* laws. John R. Commons has elaborated upon this provision and has developed what he maintains is the essence of the relationship between the individual and law in American capitalistic society.⁷ This principle is that no individual (business) can be punished (controlled) as an individual (business) but only as a member of a group of individuals (businesses). That no law can be passed punishing John Jones for murder. A law can be passed, however, punishing all murders of whom John Jones may be one.

This demand for a principle in government is extremely significant in the back-

⁶ This thought takes on its fullest significance when it is remembered that, contrary to the impression conveyed by much of the literature on utility regulation, the utility concept was not originally but one branch of economy controls. Rather it was the focal point for the bulk of policy-making in this field for a number of years—very nearly, in fact, until the outbreak of World War I.

⁷ *Legal Foundations of Capitalism* (New York: The Macmillan Company, 1924), pp. 342 ff.

ground of public utility control. If our legal and social structure did not implicitly require "a government of laws not men" it is safe to presume that there would never have arisen a public utility concept at all. For this concept was derived at a time when the absence of control by government clearly left a "no man's land" within which community ideals were obviously being violated. Extension of government control was absolutely essential, and the only problem was that of finding a principle for the extension of control that would possess all of several important virtues. It must allow a limited amount of restriction and at the same time keep regulation strictly on the defensive. And it must be concrete as to content and at the same time particularly selective.

The concept hit upon—the public utility idea—possessed all of these several virtues. It carefully proportioned those elements of social and economic life that had developed a peripheral conflict into a unified whole within which conflict was held to a bare minimum. Through it an outlet was provided for the implementation of the belief that the community needed protection from the extremes of capitalism. Through it at the same time a dike was erected that prevented a veritable tide of such belief from washing away the entire structure of capitalistic institutions. It was, in short, a first step, although only a first step, in the entire vital process of proportioning and reportioning basic elements of existence in constructing today's society.

Of the basic elements that figured most significantly in the process by which this herculean task was performed, two stand out. The first of these is the common law, the source of the police power; the

second is the Constitution, and its 5th and the 14th amendments.

Police power is the right of a government to govern.⁸ Originally police power was defined to include only the right of a government to establish conditions relative to any or all activity that affected the public health, safety, and morals. It was not until much later, when the traditional definitions of these terms made them inadequate for the task of enabling government to cope with the economy that had developed under *laissez-faire*, that police power was expanded to include the right of a government to determine proper prices to be charged consumers by any business declared to be a public utility.

It is at once obvious that police power is not a self-defining concept. Since it has already been strongly emphasized that the genius of the public utility concept lay in its capacity to establish limits to uncontrolled activity, the problem here is to attempt to uncover with some exactness the content and limitations of the police power itself.

A superficial answer to this problem can be immediately given. Police power is defined through its polar partner—due process in the 5th and 14th amendments.⁹ But this clarification is scarcely helpful. For due process is itself not self-defining. The apparent result for regulation is that there exists polar approaches to the relationship between government and industry, both of which must be considered as mutually limiting and defining the other, but neither providing an objectively precise content.

Since these polar and mutually limiting approaches to regulation are so far apart it would appear that there has been room for a considerable amount of arbi-

⁸ Ernest Freund, *The Police Power* (Chicago: Callaghan and Company, 1904).

⁹ Due process is not to be thought of in the procedural sense of trial by jury, etc.; but in the substantive sense of just compensation.

trary action in regulation. Actually, however, the relationship that developed between government and business under the public utility concept can not be said to have been an arbitrary one. Rather the rules existing at any one time have exhibited a high degree of consistency, and while there has been, as would be expected in a nation as large and dynamic as America, a changing trend in the relationship of government to business, this change itself has been consistently and gradually in the same direction. Although there are a few who might refer to this trend as arbitrary most would agree that, considered in the large, it has not been so.

It strikes the thoughtful person immediately that a consistent pattern of regulation in both the dimension of time and the dimension of space is itself proof that regulators—finite men that they are—do utilize principles and standards. It is the belief of the writer that the principles available for this purpose can come from only one source—the socially-conditioned attitudes of men. The fact that at any given time regulation is consistent is evidence that the community ideal has a tendency to influence most attitudes similarly. The fact that there has been a discernible trend in the scope and content of regulation simply demonstrates that community ideals change as the external environment, so to speak, poses new problems.¹⁰ These facts taken together are a strong evidence of the fact suggested earlier that the utility concept, as a strictly limited entity, met with virtually unanimous social agreement at the outset. They give specific, additional credence, also, to the earlier observation that the utility concept was imperfectly

understood at the outset because it was so solidly integrated with its societal environment.

Given, now, the existence and the source of a clear-cut division of labor between the police power and the due process clauses of the Constitution, it is next necessary to examine the working-out of this division of labor in the development of the public utility concept. This development has taken two distinct forms. The first is in terms of the *scope* of regulation, or the balance between public utility regulation and general police power regulation. The second is in terms of the *extent* of regulation, or the balance between confiscation and due process.

Historically the police power has been divided into the two categories mentioned earlier. The first of these gives the government, federal or state, power to establish conditions surrounding any or all activity that affects the public health, safety, and morals; the second gives the government, federal or state, power to determine proper prices to be charged consumers by *any business declared to be a public utility*.

The economic thesis of the Supreme Court in defining these separate and distinct approaches to the police power, although never explicitly stated, seems to have been the following: control over business details affecting public health, safety, and morals is by nature an incidental control that has little or no relationship to the ability of the controlled to stay in business or make a profit. On the other hand, control over prices is in very essence an external "attack"¹¹ upon the most vital aspect of the entire business process.¹² Therefore it was a most coming into court were attempts by government to limit actions by transportation agencies. The reverse situation is possible, under present-day interpretations.

¹² In other words, what J. M. Clark calls the "heart of the contract." *Social Control of Business* (New York: The Macmillan Company 1939), pp. 176 ff.

¹⁰ This type of analysis has been most powerfully developed in the field of sociology. See T. Parsons, *op. cit.*, p. 193.

¹¹ Perhaps the proper word, for the reason that while the doctrine of public interest was being formulated, the cases

logical step for the court to permit virtually any regulations that could be demonstrated to be merely incidental to the major operation of the business concerned,¹³ but to be extremely cautious in permitting over-all regulation of a particular business.

But the court's entire economic thesis is not complete at this point. This thesis in effect demanded that activity in our industrial society be interpreted in one of two ways: either it is composed of single, isolated acts having no substantial relation to a business considered as a whole; or it consists of general acts, interrelated with the composite of all other acts making up the particular business process under consideration. The former group consists of any and all acts that, taken in and of themselves, permit of superficial and extensive control without detriment to the ability of the business to sustain itself. The latter group consists of those acts that directly relate to the financial well-being of the concern, and do not permit of superficial control. The court has thus emphasized that any all-embracing act must be regulated on an intensive basis, and that regulation of such an act must be justified on somewhat more elaborate grounds than that of control of superficial acts.¹⁴

The position of the court, admittedly complex and confusing because never stated forthrightly, can perhaps be made clearer by pursuing a slightly different line of discussion. Let us suppose that an act, a tiny fraction of the composite activity of a concern, is considered detrimental to social well-being. To prohibit this act will leave the business in the same position as before. As justification

for its regulation, therefore, a legislature must prove only *that this particular act* is injurious to the public interest if unchecked.

Let us now suppose that another act, an act which itself embraces numerous acts—say quoting a price to a consumer—seems also detrimental to social well-being. But in controlling or limiting this one action, limits are also placed upon many (perhaps all) other acts of the business.¹⁵ Thus control spreads itself to action not specifically contemplated by the law itself until it embraces the entirety of the operations of the concern controlled. Thus control is established over, not an act, but an entire business process. Therefore, a legislature must prove that, not the act, but *the entire business, if unchecked*, is potentially injurious to the public interest. Actually, in *Munn v. Illinois* the first and precedent-setting case in the matter of price regulation, the court came as close as it has ever come to explicitly stating this derived economic thesis.

In that decision Chief Justice Waite remarked:

"Indeed, there is no end of regulations with respect to the use of property which may not be legitimately prescribed, having for their object the peace, good order, safety, and health for the community, thus securing to all the equal enjoyment of their property, but in establishing these regulations it is evident that compensation to the owner for the use of his property, or for his services in union with it, is not a matter of any importance; whether it be one sum or another does not affect the regulation, either in respect to its utility or mode of enforcements. One may go, in like manner, through the whole round of regulations authorized by legislation, State or municipal, under what is termed the police

insignificant taking of private property." Justice Holmes in *Noble State v. Haskell*, 219 U.S. 104. (Emphasis supplied.)

¹⁵ It is a well established principle of American Constitutional law that constitutional guarantees are no bar to legislation "not operating unreasonably beyond the occasions of its enactment." 11 *Am. Jur.* 991. See also *Borden v. Louisiana State Board of Education*, 168 La. 1005.

¹³ Regulation to be valid must tend to some ulterior good to which the destruction or curtailment of rights is merely incidental. 11 *Am. Jur.* 1007. See *State v. Henry*, 37 N.M. 536.

¹⁴ "In the first place, it is established by a series of cases that an ulterior public advantage may justify a comparatively

power, and in no instance will he find that the compensation of the owner for the use of his property has any influence in establishing them. It is only where some right or privilege is conferred by the government or municipality upon the owner, which he can use in connection with his property, or by means of which the use of his property is rendered more valuable to him, or he thereby enjoys an advantage over others, that the compensation to be received by him becomes a legitimate matter of regulation. Submission to the regulation of compensation in such cases is an implied condition of the grant, and the state, in exercising its power of prescribing the compensation, only determines the conditions upon which its concession shall be enjoyed. When the privilege ends, the power or regulation ceases."¹⁶

Essentially, then, the court demands the same proof, whichever category of the police power is being invoked. In the one case, however, proof of public interest is extended to a single act; while in the other case this proof is extended to an entire business. So far as the writer is aware this fact has never been made clear by textbook writers in the field of public utilities. Once it is clearly recognized it can be further used as a tool for investigating the ramifications of the court's economic postulates.

This all-or-nothing approach by the court, pushed to its ultimate conclusions, looks weak when judged in the light of today's economy. But it should be noted that when the principle was first set forth the economic environment and thus the need for regulation had not yet developed to a point intricate enough to actually push the court's approach to anything like its ultimate conclusions. What is important here is that a principle was required delineating the proper sphere for government control. In order that this

principle might be as definite as possible the court formulated the line of demarcation between the environment to be controlled and that not to be controlled in extreme terms.

Two important facts stand out at this point. From the standpoint of the scope of regulation, first, the public utility concept was forged into a very strictly limited tool of control. At the same time, in the second place, within the limited area allowed to it this tool was accorded comprehensive powers. Thus, from these standpoints, the utility approach to regulation excellently fulfilled the difficult requirements set for it—i.e., control coupled with control limits, and concreteness coupled with rigid selectivity. This achievement is also attained in terms of the second part of the division of labor between the common law and the Constitution—the *extent* of regulation or the balance between confiscation and due process.

Obviously the fact that the Supreme Court defined the categories of regulation in absolute terms, could not, in our social setting, be interpreted to mean that the right to control was itself to be absolute. Such an interpretation would be the equivalent of placing the public utility industries at the mercy of the law rather than within the sphere of legal protection. Accordingly it was necessary that a supplementary principle be devised to set forth the proper intensity of government regulation. As such a supplementary principle the Courts promulgated and developed the legal concept "fair return on fair value" and its opposite "confiscation," both interpreted in relation to due process.

Utility regulation has been replete with references to the due process clauses of the Constitution. Thus persons may not be deprived of property without "just compensation." This test—called the test of

¹⁶ 94 U.S. 113, 146. The court here utilizes the "implied-contract" theory of regulation, which is no longer considered more than incidental to the main problem. It also considers price regulation apart from police power, a distinction no longer recognized as valid. However, the economic pattern is fairly clear cut in terms of that here discussed.

confiscation—is invariably applied in utility rate cases as a constitutional limitation upon the exercise of the police power. Yet it is a firmly settled concept of law that the due process clause has no effect upon the exercise of the general police power (protection of the public health, safety, and morals).¹⁷

At first glance this would appear to be an irreconcilable conflict between the Constitution on the one hand and the police power on the other hand. However, an examination of decisions makes a reconciliation of the conflict relatively simple. It is said, for example, that due process limits the *improper* exercise of the police power.¹⁸ Also it is said that due process prevents *unreasonable* or *arbitrary* exercise of the police power.¹⁹ The obvious conclusion is that the court will disapprove an injury to property rights only if the injury is improper, arbitrary, or unreasonable. Sometimes private rights can be abrogated, and sometimes they can not.

However, despite the large number of pertinent decisions handed down by the courts on this subject, the terms *improper*, *arbitrary*, or *unreasonable* have never been unambiguously defined. Such definitions constitute one of the legislative problems in the sphere of regulation. The underlying position²⁰ of the Supreme Court with respect to such definitions can perhaps be understood more adequately by reference to an earlier point. Disapproval of regulation is found *inside* the Constitution in the 5th and 14th Amendments. Approval of regulation is found *outside* the Constitution in the police power. Thus the responsibility of the

Court is to steer a consistent course between the Constitution and the police power. In the absence of explicit definitions to serve as standards a consistent course must utilize certain *implicit* definitions or standards. Since the court has been quite consistent in its interpretations it seems proper to think in terms of an integrative principle for decisions. In the nature of things it seems inescapable that this principle, as suggested earlier, must represent common adherence to socially conditioned attitudes, in this case the principle of equating rights and responsibilities, or equality of opportunity.

The question as to the specific content of due process is not so easily dismissed, although in general terms it follows a rather definite pattern. "Just compensation" in the Fifth Amendment and "due process of law" in the Fifth and the Fourteenth Amendments are equivalent terms.²¹ "Just compensation" and "fair return on a fair value" are also identical in connotation.²² Although the precise substance implied by these vital regulatory concepts is primarily economic, the strictly legal implications do warrant further examination here. The purpose will be to link more closely the balance set forth by the courts, between general and public utility regulation on the one hand, and between confiscation and due process on the other hand.

An important corollary of the philosophy upon which our society is based is free will.²³ An equal society must be one in which members have equal choices. Ordinarily, therefore, government may

Jerome Frank, *Law and the Modern Mind*, (New York: Tudor Publishing Company, 1935), chapter IV.

¹⁷ *Smyth v. Ames*, 169 U.S. 466. Here "due process," verbally was not argued as such. Instead Justice Harlan centers his famous remarks around "just compensation."

¹⁸ *Board of Public Utility Commissioners v. N.Y. Telephone Co.*, 271 U.S. 23. Here Justice Butler appears to use the two phrases interchangeably.

¹⁹ Since much of our early constitutional thinking was inspired thereby, reference might be made to John Locke's *Two Treatises on Government*, so influential in solidifying England's judicial system, as well as in formulating ours.

¹⁷ 11 *Am. Jur.* 998. See *Murphy v. California*, 225 U.S. 623. There are numerous state cases emphasizing this same point.

¹⁸ *Grenada Lumber Company v. Mississippi*, 217 U.S. 433.

¹⁹ *Dobbins v. Los Angeles*, 195 U.S. 223.

²⁰ Jerome Frank has contributed a quite candid recognition of the fact of judicial legislation. This is one point on which there is comparatively little academic disagreement.

not interfere with basic choices.²⁴ By "ordinarily" is meant in the case of private business. But regulation may obstruct basic choices for a public utility industry.²⁵

In the case of general regulation, it will be remembered, the controls exercised were interpreted to be merely incidental to the operation of the business concerned, and thus its over-all relationship to the rest of society remained unaltered. The next alternative, in other words, was only imperceptibly different from the one blocked by regulation. Clearly no special protection such as due process need be invoked in this type of situation.

In the case of public utility regulation the problem is much different. Here the controls exercised were interpreted to be of material significance to the total outcome of enterprise. Therefore the relationship of the business to the rest of society was substantially altered, leaving the next alternative far removed from the one blocked by regulation. In this case, it was decided, a protection is necessary to prevent government from going too far. For in the same way that no individual may be outside the restraint of the law, in an equal society no individual may be beyond the protection of the law.

Without unduly extending this analysis the above relationships can be brought into closer juxtaposition. The typical case of government intervention is one that can in some sense be described as

monopoly as contrasted to the free competition upon which unenforced equality must be dependent. It is a well recognized characteristic of monopoly that the choices of actual or potential consumers are much more narrowly circumscribed than where enterprise is competitive. *Thus, government intercedes for the consumer* when the latter's choices are in danger of being interfered with by business. And this process is precisely the obverse of *intercession by government for business* when the latter's choices are in danger of being interfered with by the public interest.

To this point the working-out of the public utility concept has been discussed without extensive reference to the legal terms that are most commonly heard in this connection—rights and property. It seems desirable now to fit the above analysis firmly into a more traditional terminology.

It is a relatively common thing to define property in terms of rights.²⁶ Private property thus becomes rights accruing to individuals. But these private rights are not absolute.²⁷ The state may decrease or increase them, not capriciously, but according to certain reasonable principles. These principles all comprehend or are comprehended by the police power.²⁸

"The police power comprises all the power of the State except the power of taxation and the power of eminent domain, and these powers are themselves merely auxiliary powers in aid of the police power. The object of the power of taxation is to raise money to enable the state to exercise the police power and the object of the power of eminent

²⁴*Michigan Public Utilities Commission v. Duke*, 266 U.S. 570; *Frost v. Railroad Commission of California*, 271 U.S. 583; *Smith v. Cahoon*, 283, U.S. 553.

²⁵The Brandeis dissent in the case just cited contains this statement: "The introduction in the United States of the certificate of public convenience and necessity marked the growing conviction that under certain circumstances free competition might be harmful to the community and that, when it was so, absolute freedom to enter the business of one's choice should be denied."

²⁶"Property is a bundle of rights." This is the classic formulation of Richard T. Ely. *Property and Contract* (New York: The Macmillan Company, 1914), Vol. I, p. 60. From this formulation most later analysis stems.

²⁷"Rights and privileges arising from contract are subject to regulations for the protection of the public health, the public morals, and the public safety, in the same sense and to the same extent as is all property." 11 *Am. Jur.* 1000. See *Stephenson v. Binford*, 287, U.S. 251, and *Thornton v. Duffy*, 254 U.S. 361.

²⁸Police power has been variously defined. Only one definition will be given here: "The police power of a state embraces regulations designed to promote the public convenience or the general prosperity." Justice Harlan in *Chicago etc., Ry. Co. v. Illinois*, 200 U.S. 561.

domain is to enable the state to acquire property for the same purpose."²⁹

Private property is the political approach of our society to equality. As such, equality (or some concept of equality) is enforced by the police power. But private property is also the economic approach of our society to equality. In this guise equality is enforced thru economic regulation. Standing alone in either the political or economic sphere private property could have little meaning. Taken together these two represent a most important element in what we think of as our social organization. It must follow that metes and bounds in both spheres can likewise have little meaning unless interrelated into a significantly unified whole.

We have now briefly outlined the method by which limitation of property rights is made the common denominator of all regulation. In a society in which equality is important this limitation cannot itself be potentially unlimited; that is, in a world of private property, where property is defined as a bundle of rights, limitations of rights must not be arbitrary or capricious, but carefully equated to social need and desires.³⁰ If we look upon the rights taken away it would follow that regulation treats businesses or persons unequally. But if we center attention upon the rights retained in these cases, equality is evident as the governing rule. This may be merely restating the difference between a pessimist and an optimist, the one saying his glass is half empty, the other saying his glass is half full. But the realistic approach must consider the pertinent fact to be the size of the residual bundle of

rights. Though practical politics and administrative error may militate against realization of ideal equality in the size of these residual bundles, it would be a crass and undemocratic person indeed who would deny that this equality in the size of residual bundles is the end-in-view.

III

The above rather elaborate description of the working out of the public utility concept in actual practice serves two related purposes, both of which help to illustrate the fact that this concept as originally constituted is much more of the past than of the present. In the first place it emphasizes that the public utility approach to the control problem is not a single thing. It is rather an exceedingly complex interrelationship between many social facts and factors, an interrelationship that is capable of accomplishing specific objectives without overstepping ideological boundaries. Thus to devise a definition of a public utility or of public utility regulation in simple terms is a far cry from understanding. No clear grasp of the meaning of the public utility in America can be had except through an appreciation of the simultaneous singleness and complexity of its character.

A second result of the above analysis is the possibility of reemphasizing the fact that any comprehensive social configuration such as the one at interest here consists at base of the intermingling of elements that would be positively contradictory if interpreted outside the context within which it actually arose. Thus the public utility approach made possible an unlimited degree of control over a limited segment of the economy, with the stipulation that even the unlimited degree of

²⁹ J. R. Long, *Cases on Constitutional Law* (Rochester, N.Y.: Lawyers Cooperative Publishing Co., Third Edition, 1936), pp. 1069-1070.

³⁰ In the words of the court: "When the legislature appoints an agent to act within that sphere of legislative authority, it may endow the agent with power to make

findings of fact which are conclusive, provided the requirements of due process which are specially applicable to such an agency are met, as in according a fair hearing and acting upon evidence and not arbitrarily." *St. Joseph Stockyards Co. v. United States*, 298 U. S. 38.

control could strive for only a limited result—competitive prices and competitive returns. Stated conversely, the public utility approach provided unlimited protection for those industries over which an unlimited control was to be exercised, and a limited protection for businesses subject to limited control.

It is instructive to note that the unitary, complex institution that the public utility became shortly after 1877 itself represented an evolution. Prior to that time the police power was allowed to have only its narrow, original meaning. With that meaning its usefulness for regulating a modern, capitalistic industry would have been negligible. But in that period in the development of the country in which this narrower interpretation prevailed it must be conceded that such a definition was largely adequate. With businesses typically small and reasonably competitive, and with a frontier offering numerous opportunities for economic advancement and security no large measure of control was indicated. It was only later when the capitalist environment had clearly begun to encroach upon the security and well-being of the individual that a supplementary approach to this problem was demanded.

Fortunately, perhaps, social evolution never advances with strides that are either long or quick. This is equally true of both of the factors that reciprocally make up social environment—objective realities and subjective interpretations—as well as the net result. Thus it is easily understandable that the first amendment to traditional public policy would of necessity be relatively small. Only a few industries had by that time crossed the line that demarcated reasonably good social consequences from consequences that could no longer be allowed to go untrammelled.

It is understandable, too, why the im-

plicit interpretation of the public utility concept by the Supreme Court was so unqualified and hence so obviously artificial and unreal. For the context within which the concept was applied was at that time so constituted that the either-or approach (either an industry is subject to total regulation or it is subject to virtually no regulation) was not misleading. This was, be it noted, an exceedingly happy circumstance since the need to keep the idea of regulation on the defensive while still permitting regulation made it essential that an unqualified line of demarcation be established. Such a line effectively minimized subjective fears of extensibility by setting forth clear limits to the concept, and at the same time it made possible the establishment of equally clear and unqualified restrictions on the control mechanism itself.

The most important fact, however, concerning the early promulgation of the utility idea is that it would not have been elaborately worked out to place restriction against restriction, and freedom against freedom, had this technique not stood virtually alone as a system of formal control. If there had been other justifications for exercising control, for example, there would have been no need for so closely defining the utility business. Likewise if there had not existed the competitive norm by which to judge certain aspects of control there would have been no reason for so precisely delimiting the lengths to which control might go. It follows that the disappearance of either of these conditions would render less significant each separate element of this control structure.

Since 1877 economic life and the institutional complex within which it is lived had grown infinitely more complex. One of the principal ramifications of this growing complexity has been to introduce a greater continuity into industrial or-

ganization in so far as the relationship between business and the remainder of society is concerned. Thus a simple, 100 per cent classification of business from this standpoint—into utilities and non-utilities—became less and less acceptable. Today it is no longer realistic to hold that the relationship between the common carrier and the public is different in kind from the relationship between the steel industry and the public.³¹

As business became more complex in its structure regulation could not effectively remain simple. An abundance of devices had to be kept at hand with which to enforce a "higher level" of community activity. These devices had to be just as varied in fact as those available to industry for use in non-community behavior. Anti-trust controls arose in response to the trust method of "exploitation." Controls of a special kind were devised for use in the field of labor relations as the *status quo* in that field became intolerable. Fiscal and monetary controls are currently being perfected for use in that wide area of institutional relationships where only overall action can produce the results desired. On all sides there are visible new and variegated tools for use by government for community purposes.

This expansion of the field of government and the multiplication of its tools have many meanings for the student of government. One of these meanings however, is particularly significant for present purposes. Just as the development of the public utility concept represented a distinct evolution from prior business-government relationships, so

does the development of new tools mark a further evolution in these relationships. And just as the "health, safety and morals" definition of police power lost a portion of its significance when it was expanded to include price regulation for public utilities, so the public utility concept is now in the process of losing much of its significance to a still broader approach.

In addition to the above general statement of this rather obvious fact there are two specific ramifications that are particularly noteworthy in this same connection. First, there is no longer any need to keep permissible regulation of the utility type encased in a formidable strong-box to keep it from "contaminating" other relationships. There are now so many "contaminations," in a manner of speaking, that utility control as such is relatively insignificant as far as policy-making is concerned.³² To maintain the carefully and elaborately limited utility approach to control wholly apart would be to erect a levee to keep a stream within its banks while the tide is engulfing the entire area.

Second, as the government expanded its activities, the spontaneous competitive norm that provided a framework for control tended to become more artificial. As a consequence the precise limitations on control as expressed in the utility approach became actually unreal. To assert that fair return is 4 per cent when the government is the dominant influence in the capital market³³ may be wholly objective from one point of view but it just as certainly borders on the arbitrary from another. Thus the structure of relation-

necessarily much diluted, thus limiting their influence at any one point. Fiscal controls, of course, is the largest "door" through which control extension is expanding.

³³ This is not to say that, apart from the war period, the government is the dominant influence. But here again it is not necessary to take an either-or position in order to emphasize the increasing extent to which government policy has a decisive significance in connection with the interest rate.

³¹ The extreme concern expressed by the entire nation, from the President down, over a contemplated steel strike early last year offers a striking proof of this fact.

³² An allied consideration is perhaps worthy of mention. Policy is made in a democracy through compromises between opposing interests. When controls were basically limited to one avenue of extension the interests adversely affected could easily concentrate their inhibitory tactics. With "many doors to guard," so to speak, these forces are

ships that were demanded within the context in which the utility concept originally developed has tended to become superfluous in a substantially different context.

All of this is certainly not meant to demonstrate that the principles behind the utility concept are outdated or outworn. Indeed it is these same principles that have sponsored the supplementary approaches to the control problem. An ideology can not avoid, in short, expressing itself in a different way as the conditions of its expression are significantly altered.

The above discussion provides the answer to the principal problem around which this presentation is based, i.e., the sense in which the public utility concept can be said to have declined. In its period of greatest dominance it was a vital phase in the evolution of government in the world of capitalism. As such it was a self-contained, self-limited control structure. It itself fulfilled the basic demands of virtually the entire ideology as regards the relationship between government and business. In effect it was a machine capable of turning itself on and off practically at will. It was at one and the same time the essence of both simplicity and complexity.

Today the relationship of business and government has evolved at least one step further. While the contemporary period is still too close upon us to permit as full a perspective as is possible with respect to the utility phase, it is still possible to note and emphasize some essential differences. The self-contained, self-limited aspect of control is missing from today's scene. The automaticity of operation, the painstaking protection of the citizen, the relatively narrow extent of the government's

function seem to be slipping irretrievably into the past as the wheels of evolution grind out their slow advance. And while from many points of view the evolution gives every evidence of naturalness, it is easy to understand the source of the fear that it imparts to some. The intent of this discussion is to emphasize the element of naturalness and leave out of account any element of judgment on the course of past or future history.

It will perhaps add a constructive note to conclude with a concrete suggestion as to probable alterations in the public utility framework in the light of this internal evolution. First, the Supreme Court for at least 20 years has been subjecting its own 100 per cent distinction between utility and non-utility business to increasingly severe pressure. Mr. Justice Stone's mild dissent in *Ribnik v. Mc-Bride*,³⁴ Mr. Justice Brandeis' vigorous dissent in *New State Ice Company v. Liebman*,³⁵ and the majority opinion in *Nebbia v. New York*,³⁶ all indicate that this element in the structure of the utility concept may very well be disappearing. This, of course, would strike a mortal blow at the entire foundation of what we have here termed the *scope* of regulation.

Not only the scope of regulation but its *extent* as well seems to be feeling the effects of this dynamic process. In what is now a quite impressive list of cases³⁷ culminating with *Federal Power Commission v. Hope Natural Gas Co.* in 1944³⁸ the Supreme Court has given effect to the proposition that the 5th and 14th amendments are not a bar to price regulation that is reasonably appropriate to the evil to be remedied. To conclude from this that the Supreme Court will never again invalidate actions of legislatures or commissions on "due process" grounds would certainly be unwarranted. But it does

³⁴ 277 U.S. 350.

³⁵ 285 U.S. 262.

³⁶ 291 U.S. 502. In this case the courts' special distinction between price and other regulation was specifically disavowed.

³⁷ For a complete list see the minority opinion in *Federal Power Commission v. Natural Gas Pipeline Co.*, 315 U.S. 575.

³⁸ 320 U.S. 591.

seem safe to say that the division of labor between the police power (the common law) and due process (the Constitution) has definitely been re-proportioned in favor of the former and to the detriment of the latter.

Superimposed on and representative of both these developments is a third alteration of traditional patterns. As contrasted with an earlier era in which the Supreme Court subjected the evolution of utility control techniques to the most painstaking scrutiny, the entire edifice of special judicial review in this field may be very well crumbling. In both the Natural Gas and Hope cases the inference is exceptionally strong that the typical rate case does not contain issues legitimately within the purview of the Court. Of particular interest in this regard is the fact that the Court seems to be specifically extending its retreat to the matter of rate control formulae ('fair return on fair value'). This would seem to be a further

and most conclusive indication that the utility concept as originally conceived and operative is undergoing profound change in the directions outlined in this paper.

There will doubtless be other alterations in the utility approach to control as it seeks to adjust itself to the different character into which business-government relationships are evolving. It is only natural, after all, that when the *raison d'être* begins to fall apart the "*modus operandi*" cannot fail to reflect faithfully the stages of this process. These changes will be well worth the constant attention of the student of regulation. But it is nonetheless true that an understanding of regulation will become increasingly less dependent upon an understanding of the utility concept, and that the pleasant pastime of defining a public utility will become increasingly less useful as the forces of economic and social history work themselves out still further.

Rural Public Works: Part II:—Building a Positive Program†

By V. WEBSTER JOHNSON, JOHN F. TIMMONS
and E. JAY HOWENSTINE, JR.*

THE survey of rural needs summarized in the previous issue of this *Journal*¹ shows that rural public facilities and land resources are sorely in need of improvement. It was indicated that the process of making these needed improvements would create millions of worthwhile jobs to help stave off unemployment should it again threaten the Nation's economic well-being. Theoretically at least, rural public works and worthwhile jobs should go hand-in-hand. Practically, however, numerous obstacles remain to be overcome in building a works program that is truly effective in providing socially desirable large-scale job opportunities.

Efforts to build a positive program of rural public works cannot safely ignore the experiences with public works programs over the past two decades. A review of these experiences, particularly those of the early thirties, reveals certain obstacles that stood in the way of carrying out an effective program. These obstacles center around inadequate plans for needed improvements, poor timing of expanding and retarding project operations, inadequate financing for planning and constructing improvements, problems of administration and the unique problems growing out of public works on private lands.

† The term "public works" is interpreted to include all physical improvements that serve the public interest enough to warrant their being financed and supervised in whole or in substantial part by public agencies—national, state, or local. Thus defined, public works range from the construction of public buildings to erosion control on private land.

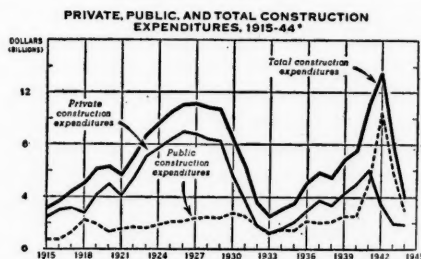
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Planning Ahead

During the early months of the depression which began in 1929, vigorous efforts were made to accelerate both public and private construction. Following these efforts, total public construction temporarily reversed its downward swing and actually increased slightly during 1930. (Fig. I) By 1933, however, when private construction reached a low of 2.5 billion dollars, public construction also hit a low of 1.3 billion dollars. This was the very time that it should have been expanding to offset decrease in private construction. Thus, public employment was not expanded significantly to offset declines in private employment despite the general agreement on the principle of compensatory public works.

Public construction contracted even more in rural areas than in the country as a whole. (Fig. II) Whereas expendi-

FIGURE I. PRIVATE, PUBLIC, AND TOTAL CONSTRUCTION EXPENDITURES, 1915-1944*



* Bureau of Labor Statistics Estimates: includes expenditures for new construction and major additions but excludes maintenance (except for farms) and all work relief.

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¹ "Part I—Needed Improvements and Useful Jobs," February 1947, pp. 12-21.

tures for city, state, and federal construction in 1933 were from one-half to one-fourth the size of 1929 outlays, average county construction expenditures, representing mostly the rural areas, declined to a mere fraction of their former volume.

The sharp decline in rural construction is understandable. Lowered real estate values, increased tax delinquencies, and low constitutional debt limits had seriously reduced rural governments' income and power to borrow. Farmers and business men in rural communities were quick to put curbs on governmental as well as their own private expenditures. Plans for making needed rural improvements were not in existence. Under these conditions the expansion of public works projects to absorb the unemployed was impossible, although plenty of work needed to be done.

Despite the costly lessons of the last decade, emphasizing the necessity of advance planning, available evidence today indicates that an appreciable backlog of plans for urgently needed rural improvements has not been started and that, in this respect, rural areas are lagging far behind urban centers. Why has not the country profited from the costly experiences of the 30's? Why have not rural governments, in particular, made more progress in planning for their improvements?

Answers to these questions may be found in three basic conditions that are characteristic of rural governmental organization. In the first place, rural governments seldom have an organization corresponding, for example, to the city council or city manager, which integrates urban public improvement plans and spearheads them through to completion. On the contrary, responsibility for rural improvements is frequently scattered among several officials and throughout numerous units of govern-

ment. Thus it becomes difficult, although by no means impossible, to get all of the interested officials together and to develop a well-rounded plan of public works. Second, rural governments generally do not have the funds or technical personnel necessary for planning large reservoirs of projects sufficiently ahead of the time of construction. On the average, projects planning makes up 4 percent of the total cost of the project; and few rural communities are in a condition to incur that extra cost to build up a reserve of projects for a rainy day. Furthermore, local governments frequently do not have the authority to spend funds for advance planning. For example, a Federal Works Agency survey in July 1944 showed that twenty-seven states and more than one-half of all local governments lacked either the authority or the funds to go forward with planning their needed improvements.² Third, without sufficient funds for planning, technical assistance, and the supporting organization, rural officials do not generally find it expedient or feasible to build up plans for improvements unless they have some idea of how to finance the later work. Since many of the rural improvements are financed by state and federal loans and grants-in-aid and by local bond issues, it is exceedingly difficult to plan these improvements very far ahead of the time of beginning construction.

One way to break the planning bottleneck is by granting state and federal assistance to help finance the preparation of plans and specifications. Seven states—New York, Michigan, California, New Jersey, Pennsylvania, Illinois, and Maryland—have set up funds, some on a matching and others on a loan basis, to help finance the planning of future public

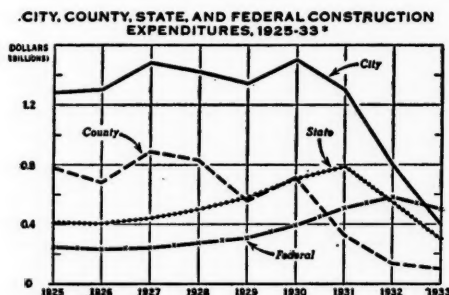
² U. S. Department of the Interior, Federal Works Agency, *Report of Proposed Postwar Public Works*, September 1944, p. 16.

improvements. Congress on two occasions has empowered the Federal Works Administrator to make non-interest-bearing loans totaling 65 billion dollars to state and local governments to finance the preparation of plans. Since planning averages around 5 percent of total project costs, the appropriations thus far are scarcely a drop in the bucket of financial needs for planning. And, furthermore, rural communities do not appear to be taking advantage of these funds to the same extent as are urban communities. These appropriations are being exhausted rapidly and additional appropriations have been requested. The granting of technical assistance from state and federal agencies is another means of accelerating local project planning.

Expanding and Retarding Project Construction

Although a well-timed public works program—expanded during declining private employment and retarded during increasing private employment—was urged continually during the 20's and 30's, it was never achieved, as shown in Figures I and II.

FIGURE II. CITY, COUNTY, STATE, AND FEDERAL CONSTRUCTION EXPENDITURES: 1925-1933*



* Arthur D. Gayer, *Public Works in Prosperity and Depression*, (1935) p. 53.

As indicated in the previous article, many rural public works are so urgent that they cannot safely be geared to employment conditions. For example, flood

control improvements—if they are needed in order to prevent possible loss of life and irreparable damage to resources—should be made, regardless of business conditions. Urgently needed schools, hospitals, forest improvements, and soil conservation should not wait until unemployment threatens. But it has been pointed out that many rural projects may either be postponed or accelerated. They can form the basis for timing rural public works in accordance with employment conditions.

The determination of the precise time when it will be best to throw a public works program into high gear, to compensate for declines in private employment, is a real problem. It is necessary to weigh immediate needs for improvements against those that are postponable, and it is necessary to give over-all information to units of government as to the general trend in employment conditions. The task facing government, particularly local units, in saving funds in times of prosperity for use in a later period is no small political and psychological hurdle.

One different aspect of the timing problem is to obtain a coordinated policy among all governmental units so that the acceleration or postponement of projects by some units is not offset by the opposite action of other units. The possibilities of conflicting rather than dovetailing policies can be readily appreciated when it is remembered that in the United States more than 155,000 governmental units have more or less independent construction programs. Moreover, local pressures frequently run counter to the needs of a well-timed program, for there is a strong tendency for local public officials to carry out public works when the money is available and to ignore broad considerations of maintaining full employment. The development of a

well-timed rural public works program, therefore, requires far-sighted leadership among all rural governmental units.

Financing Rural Public Works

Since the general property tax has been the main source of revenue for rural government, they have either had real difficulty or have been unable to raise funds for planning and carrying out an adequate public works program. Until the 1930's, approximately three-fourths of all local revenues came from the general property tax. Since 1932, however, there has been a marked decline in the importance of the property tax for local purposes. The percentage of county revenue drawn from property taxes dropped from 72 percent in 1932 to 52 percent in 1941. The property tax is particularly unreliable from the standpoint of sound timing policy because it dries up in depression precisely at the time when more funds are needed to expand public works. Tax delinquencies were especially acute in rural communities in the last depression; current defaults on farm property taxes increased 222 percent from 1928 to 1932.³

The financial condition of local governmental units has been materially improved since 1940. For instance, from 1940 to 1945 the net reduction of local governmental debt, including counties, cities, townships, school districts and special districts, was roughly 15 percent.⁴ Possibly as much as one-fourth of this improvement in the debt situation was achieved in rural communities.

Local governments have been able to accumulate reserves which can be used to finance the expansion of postwar public improvements but preliminary investigations indicate that the reserves will be

needed mainly to make up for the public projects that were necessarily postponed. If this is true, it raises a fundamental question of the ability of many units of government to build up a reserve in good times to finance a public work program during a period of recession or depression.

Two basic methods exist whereby state and federal financial resources can be made available to local government, namely, through loans and through grants-in-aid. Loan financing has long been used by both private enterprise and governmental units as a means of raising necessary funds, but it is only in recent years that the federal government has inaugurated a loan policy to assist hard-pressed local governments.

The loan method as developed by the Reconstruction Finance Corporation is well adapted to self-liquidating projects in the rural community such as sewerage or water supply systems. It has many merits. It enables governmental units to retain practically complete control over the use of borrowed funds. It utilizes state and local borrowing capacity to a fuller degree than used to be the case, before resorting to direct federal aid; and so it helps to insure greater interest in the project on the part of local people. It enables governments to borrow at low interest rates at a time when borrowing in the open market would involve sales below par and at high interest rates. Moreover, the technical assistance and financial supervision given by a loaning agency, such as the RFC, should materially improve the quality of projects.

There are, however, certain clear limitations on the straight loan method of financing public works. If loans are limited to self-liquidating projects, many worth-while projects would be automatically eliminated from consideration.

³Joseph Rosa, "Some Causes of Farm Tax Delinquency," *Agricultural Finance Review*, November 1940, p. 8. See also Rosa, "Farm Property Tax Payments and Rural Government Finance," *ibid.*, May 1941, pp. 21-9.

⁴Bureau of the Census, "Governmental Debt in the U. S.," 1945 *Report of Governments*, February 1946.

Moreover, loans to governmental units that are already suffering from shrinking revenues, tax delinquencies, heavy debt, and excessive interest charges, can provide neither the desired financial relief nor funds adequate to take care of a serious unemployment situation.

The other major method of inter-governmental financial cooperation is by use of the grant-in-aid. Here a money payment is made from one governmental unit to another for a specified purpose. Usually conditions are attached to the grant, such as matching of the amount by the receiving unit and maintaining minimum standards relating to such matters as construction standards as well as hours, wages, and other administrative procedures. But within the framework of these minimum requirements, the receiving unit—be it state, city, or county—is free to use the money as it sees fit. The grant-in-aid is especially well adapted to such rural improvements as roads, schools, hospitals, and forest improvements.

The traditional grant-in-aid has certain limitations in an over-all public works program. In the first place, periods of depression frequently have so weakened state financial structures that states have been unable to raise the funds required to match federal funds, say on a 50-50 basis. This happened in regard to highway aid from 1933 to 1935 and in Federal Emergency Relief Administration aid in the winter of 1933-34 and thereafter. Although useful as a financing technique during prosperity, the traditional grant-in-aid is definitely inadequate in periods of depression—the very time when national policy demands that public improvements be expanded.

Second, the traditional 50-50 matching formula has resulted in a situation in which the wealthiest states, which need the aid least, get the lion's share of federal

funds, whereas the poorest states, which need assistance most, get the smallest share. This will always be true in a system that overlooks the relative financial capacities of receiving states.

The core of the financial problem centers around a coordinated local-state-federal financial system that will tap the combined financial resources of all governmental units fairly and in such a way that urgent rural needs can be met within the calculable future. Particularly it would make possible an expansion of rural public works at the times when they may be needed to help to stabilize the economic conditions.

Public Works on Private Lands

Public works programs carried out under the early emergency relief acts of the past decade forbade the use of public funds in such a way as to enhance the value of private property. The purpose of this policy was twofold: to prevent private windfall gains and to minimize public competition with private enterprise. In the early application of this policy, improvements were not permitted on privately-owned farm, ranch, and forest land, or in privately-owned hospitals and schools, even though the resulting improvements would have been more in line with public interest than they were in certain other projects that were permitted.

The effects of the exclusion of public works on private lands, not obvious at first, became particularly noticeable in some areas as the most urgently needed projects were completed, leaving the less needed projects to be undertaken. The irony of such a policy reached its peak in those areas in which limestone rock was used to surface roads that were seldom traveled, while adjoining farm lands were suffering for lime. In fact, the low productivity of some of these lands, which

contributed to local relief and unemployment problems, was due in considerable measure to the high soil acidity, which would have been materially aided through an application of the limestone being used on the roads.

As a result of the obvious shortcomings of such a policy, restrictions against public works on private land were removed, one by one. In 1937, certain rural electrification projects sponsored "by and for non-profit rural electrification cooperatives" were permitted. The following year, aid was extended to self-help cooperatives and the scope of public works was extended to include the "production of lime and marl in Wisconsin for fertilizing soil for distribution to farmers under such conditions as may be determined by the sponsors of such projects under provisions of State law." In 1939, the provision regarding limestone was extended to other states, thus making it possible to produce limestone needed for the land through public works. During 1939, Congress permitted soil conservation projects, provided such projects were "sponsored by conservation districts and other bodies duly organized under State law for soil erosion control and conservation." In 1941, projects sponsored by "community ditch organizations" were added to the growing list of permitted projects.

Based on experience during the 1930's, public improvements on private lands should be premised on three fundamental conditions. They are (1) substantial public interest, (2) strong likelihood that the improvements will not be undertaken by the individual farmer of his own volition, and (3) individual participation in the construction and maintenance of the improvements.

Substantial public interest is essential. For example, if soil conservation improvements are limited merely to increasing

the production of an individual farm with little or no benefit to the community, the public interest is incidental and not substantial. The justification of public expenditure for private land conservation is found in the destruction or depletion of neighboring farms caused by uncontrolled erosion on the farm in question. It is to be found in the destruction of or harm to reservoirs, or to lakes used by the public for navigation, recreation, and water supply purposes; in the washing out of bridges and roads; and in the lowering of land values and hence a lowering of the community tax base by preventable circumstances. Such conditions give rise to a substantial public interest.

To spend public funds on some lands is not only socially unjustifiable but is also a disservice to their occupants. A somewhat extreme example is the spending of public funds to rehabilitate badly eroded farm land on an isolated farm in a forestry or grazing area. In such instances, the public spending on land improvement might well amount to more than the original value of the lands, and an incentive is given to maintaining roads and schools at high cost in areas that are unsuited to year-around residence.

Second, as a general guide, public expenditures should be limited to those socially desirable improvements which the individual farmers would not undertake by themselves. The ability of the landowner to bear the cost is an important criterion. For instance, much of the cost of preventing or checking soil erosion can be borne by an individual farmer, provided he is given help at critical stages in the job and, through an education program, is brought to appreciate the values of conservation.

Third, as far as possible the individual farmer or landowner should participate

directly in making a specific improvement. Participation by the individual gives him a greater real stake in the improvement and a deeper sense of responsibility in maintaining it than if a government agency did all the work.

In large developments, such as drainage and irrigation projects, care must be exercised in seeing that individuals do not receive large windfall benefits from public expenditures. Where prevention of such benefits is not possible, a capital gains tax or some similar device might well be used to recapture extensive benefits. In the final analysis, the efficient expenditures of public funds on private lands call for the development of projects within a sound framework of well-developed public policy, experienced administration, and the authority and courage to say "No" when proposed expenditures are not in the public interest.

There are two major methods of carrying on public improvements on private land: through local governmental authorities and through direct arrangements with individuals. The 1943 Emergency Relief Act, the last act under which emergency public improvement programs operated, permitted a wide variety of conservation developments and improvements on private land to be carried out through governmental authority and sponsorship. Governmental authority was not limited to conventional units of government—county, township, or school district—but included soil conservation districts, grazing or forest districts, irrigation and drainage associations, and other rural governmental or quasi-governmental organizations. Through grants or loans, or a combination of both, under governmental units, landowners obtained heavy nonfarming land improvement equipment, such as bulldozers, for use by groups of farmers under the supervision of these local units of government. Many types

of surplus war equipment could be made available in this way for use in public improvement programs.

For major types of farm facilities, such as housing, it would appear best to work through a rural facilities authority or a rural housing authority that possessed the power to absorb part of the cost of the construction of farm houses or facilities provided that the undertaking along with other land improvements and tenure arrangements, would create a going-concern farm at a reasonable cost to society. Special care must be exercised in building new housing facilities to make certain that they are located on farm units of the size and on soil of the type that are capable of supporting a farm family. Otherwise, the occupants are likely to be frozen on uneconomic farm units by the attraction of good living quarters and the houses will deteriorate rapidly because the farm income will not be enough for upkeep.

Government assistance would have an especially important part to play if a rural housing program were made a part of a farm rehabilitation or agricultural readjustment program. Grants have already been made for improved living facilities in the program of farm ownership of Farmers' Home Administration and in group housing projects for migratory labor. If the federal government were to undertake in certain areas a substantial agricultural conversion program aimed at a more balanced diversified farming on more adequate family units than at present, the expenditure of public funds for farm buildings and other rural facilities would appear to be as justifiable as the expenditure of public funds to bring about a shift in crop production. In fact, without some type of governmental construction aids it would appear to be very difficult to bring about certain shifts in land use and farming operations.

A well planned public works program should have a real place in any agricultural program that is aimed to bring about higher levels of living and fuller opportunities for farm people.

For private lands outside the jurisdiction of governmental units, conservation developments and certain "living practices" affected with a public interest may be encouraged through assistance payments made directly to the individual, just as they have been used to encourage "production practices" under the Agricultural Adjustment Act. For instance, the screening of houses or other mosquito control measures in malaria-infested areas, the provision of pure drinking water, and the provision of minimum sanitary facilities would appear to be as vital to the public welfare as the conservation practices for which incentive payments have been made for a number of years. It would be particularly important that such payments be made only to individuals who would perform certain acts or services to safeguard the public interest.⁵

Carrying Out the Program

The central purpose of rural public works administration appears to be one of bringing together the several units of government and officials responsible for rural improvement so as to achieve the greatest degree of efficiency and democracy in carrying out a program of rural betterment.

Traditionally, most rural public works have been locally financed and administered. By 1916, however, when practically one-fourth of total state expenditures were going into school and highway grants-in-aid⁶ and the federal highway grant-in-aid system was set up on a

permanent basis, a shift in administrative policy began to take place. In order to insure that federal and state monies were expended in an economically sound way, state and federal governments laid down certain minimum conditions governing the expenditure of funds by the local receiving units. Such things as project approval, over-all planning of the project, and wages and hours were often matters for some degree of state and federal control.

During the 30's, there was a tendency among local governments to turn to the federal government as leader and savior. It is largely during depressions, when state and particularly local finances become markedly inadequate, that the need for developing a better federal-state-local administration pattern becomes most urgent. But obviously the logical time for working out satisfactory arrangements is prior to an emergency when deliberation and mature judgment can be used. When an emergency is on, haste and improvisation frequently prevent the development of sound administrative policies.

Of particular significance to rural communities was the undesirable practice that emerged during the thirties which required families to prove destitution before they could be certified by the local relief agency for work relief. In order to qualify for public employment families frequently felt forced to sell cows, chickens, and other property, which had enabled them to remain at least partially self-supporting. Although the "means test" originally sprang from the laudable desire to safeguard relief funds for those most needing them, it not infrequently forced those in partial need to become paupers. An experience like that is usually exceedingly harmful to the self-

⁵ For a further discussion of public works on private land, see V. Webster Johnson and John F. Timmons, "Public Works on Private Land," *Journal of Farm Economics*, November 1944.

⁶ Henry J. Bitterman, *State and Federal Grants-in-Aid* (Mentzer, Bush, 1938), p. 48.

respect, integrity, and working efficiency of the individual. This practice actually lengthened the time during which people remained in need because they had had to liquidate their backlog of income-producing property.

Use of modern equipment and materials is practically universal in regular public construction done on the contract basis, but it is not so well accepted in an emergency public works program. The future elimination of all restrictions on the use of equipment and materials would be one of the most important administrative improvements. Government as an employer should use all the modern equipment and materials that private employers use. To do otherwise is socially unpardonable and tends inevitably toward leaf-raking and boondoggling.

The over-all administrative machinery for a rural public works program should be a part of the local-state-national administrative system established for all public works. It would appear desirable that the main responsibility for nationwide coordination and flexibility be centered in some national agency, such as a national public works administration. Coordination is highly essential in the field of rural public works since they cut across the activities of many agencies such as those within the Department of Agriculture and Department of the Interior, as well as many different state departments, in addition to tens of thousands of local governmental units. Furthermore, such coordination is necessary to obtain balance in a public works program. Otherwise, the situation will continue about as it has in the past.

One of the main purposes of a national public works administration would be to so direct or be in a strategic position to exercise effective leadership in a nationwide public works program as to achieve the twin objectives of public works—that

is, to provide needed improvements and to help to stabilize employment. As far as possible, administration and leadership ought to be decentralized; but there is a limit beyond which this is desirable if the objectives of public works are to be attained and if the fiscal obligations of the task continue to rest largely with the federal government.

Summary

Need for rural improvements—the basis for all sound rural public works—is apparent to all who observe the Nation's eroded fields, denuded forests, and serious deficiencies in rural roads, schools, hospitals, health centers and other facilities. These needs, acute before the war, grew steadily worse during five years of war. An inventory of needs shows that, all together, between 50 and 75 billion dollars of government expenditures, or expenditures sponsored or directed by government, are required to provide reasonably adequate levels of rural improvements. These expenditures would create in the neighborhood of 18 to 25 million man-years of exceptionally worthwhile employment on the site of the improvements and an equal amount of indirect or off-site employment.

Despite the urgency and magnitude of these needs, the Nation has made little progress in developing a positive program for planning and carrying out a public works program. Major obstacles to a positive program include lack of organization, lack of leadership, and lack of funds for planning and developing an integrated program of development. The future welfare of rural people demands that immediate steps be taken to overcome the obstacles in the path of making these rural improvements and in using them to help stabilize employment.

The key to building a positive rural public works program—designed to make

our rural communities better places in which to work and live as well as to help provide worth-while jobs for the Nation's workers—lies (1) in building a reserve of well-planned projects out of urgent rural needs, (2) in planning improvements in relation to land resources and population patterns, (3) in timing the making of these improvements so that the most urgent are made first and the less urgent are constructed more slowly or more

rapidly depending upon employment conditions, (4) in protecting the public interest when public works are made on private lands, (5) in providing well-integrated yet decentralized administrative control within desirable standards of working conditions and rural improvements, and (6) in finding or developing dynamic rural leadership which will assume initiative and responsibility in the job of carrying out the program.

Pattern of Land Utilization and Possible Expansion of Cultivated Area in China

By SHU-CHING LEE*

LAND has been of fundamental importance in the life of the peasants of China for more than 30 centuries. Confucian scholars implanted in the minds of the Chinese people the idea that those who own land own wealth. And for centuries the peasant has striven for this ideal as the ultimate goal of happiness. It has exerted such tremendous influence that today not only farmers but men of every other walk of life feel the urge to possess a piece of land, be it a farm or a garden. Those who have land will strive to preserve and enlarge it and those who have none will endeavor by all means to secure a parcel. This craving for land has made Mother Earth worshipped as an universal diety whose temples exist everywhere in the vast territory of China.

In tackling the problems of, or seeking an answer to the land use pattern in China, one cannot fail to note the geographical divergencies existing in different parts of that country. As no scientific, geographical survey of the whole nation has ever been made, the writers who have made estimates on the total area hold different opinions one from the other. The figure which has been generally accepted as relatively credible is 4,277,260 square miles.¹ Of course, not all this area is cultivable. It was esti-

mated that 11 per cent of this total can be classified as plain; 17 percent, basin; 11 percent, hilly and rugged land; 7 percent, valley; 24 percent mountain; and 30 per cent plateau.² A more reliable estimate made by Wen-hao Wong, one of the leading geologists in China, shows that 10 per cent falls to plain; 16 per cent, basin; 9 per cent, hilly land; 35 per cent, plateau; and 30 per cent, mountains.³ From these estimated figures, we may easily get the impression that the proportion of the national physical area which can be used for crop production would not be very large.

Among the physical factors, not only is topography one which conditions land use and crop production, but temperature claims considerable importance. Every plant needs its own length of growing season. In China, in the regions north of the Great Wall, there are only 140 days or even less in a year when plants can grow. In the Yellow River Valley, the killing frosts between autumn and spring set the limit of the growing period to 222 days; in the Yangtze Valley, the length is 285 days; but, in the southernmost region, vegetation can grow all the year round.⁴ These are the climatic boundaries set for China to grow soy beans in Manchuria, wheat in the North,

*Figures estimated by the Bureau of Statistics. See *The Statistical Abbreviations of China*, (in Chinese) Table 2, 1935.

² Cited from Wen-hao Wong, "The Distribution of Population and Land Utilization in China," *Independent Review*, Nos. 3 & 4, 1932. This article was later translated into English and presented as a preliminary paper at the Fifth Biennial Conference of the Institute of Pacific Relations held at Banff, Canada, August 28, 1933. The estimate cited here was not mentioned in his English pamphlet.

⁴ Cf., B. Burgoyne Chapman, *The Climatic Regions of China*. University of Nanking Bulletin 3, 1933; and Cressey, *op. cit.*, p. 89.

* National Tsing Hua University, Peiping, China. *Land Economics* (Richard T. Ely and George S. Wehrwein, The Macmillan Company: 1940) was translated by the author into Chinese and published by the Commercial Press, Shanghai, in 1944.

¹ This figure is taken from George B. Cressey's *China's Geographic Foundations*, (New York & London: Mc Graw-Hill Book Co. Ltd., 1934) Table XXXVI, Statistical Summary. In *China Handbook*, 1937-1943, (New York: The Macmillan Co., 1943) the figure given as China's total area is 11,562,184 square kilometers.

and rice in the central and southern parts of China.

Precipitation is another physical factor conditioning plant growing and crop production. On the basis of rainfall, land may be classified generally into three different belts in the temperate zone. A region with a rainfall less than 10 inches is arid; that between 10 and 20 inches, semi-arid, and that with more than 20 inches, humid. It is generally agreed that a region with less than 15 inches of rainfall can be used only for pasture. In China, a vast area in the North and Northwest, i.e., the regions beyond the Wei and the Yellow Rivers, belong in this category. South of this area, the Yangtze Valley receives annual rainfall of roughly from 40 to 60 inches, and further south along the coast of Fukien and Kwangtung provinces the rainfall exceeds 80 inches.⁵ In dynastic days, the center of the Celestial Empire was not in the humid but in the semi-arid regions of the Northwest and the North. Owing to the deficiency of precipitation, the dragon who, it was believed, had the power of directing and distributing rainfall and controlling waters, was worshipped as a deity for almost a thousand years. In fact, the dragon was considered so sacred and powerful that it became the symbol of the emperor.

Equal in importance in conditioning the utilization of land is the quality and nature of the soil. Not all soils have economic value for crop production. According to James Thorp's classification of the soils of China, the area of the naturally most fertile soils (which can be considered as tantamount to the Corn Belt of the United States) is very limited. First-grade lands are found in the Man-

churian Plain, the grass lands of Inner Mongolia, the Szechuan Basin, a part of the North China Plain, certain regions of the Yangtze Valley, and a small area around the mouth of the Pearl River. All other lands can be only classified as second- and third-grade soils. The worst type of land covers the vast regions of mountains and plateaus where not even forests can grow.⁶

Out of these physical limitations, what proportion of the total area may be classified as arable land and how much of this is now actually under cultivation? The answer can be no more than guesswork. Excluding Tibet, the total land area of China, as estimated by O. E. Baker, is about 2440 million acres of which, subtracting the lands which are naturally unsuitable for cultivation, only 700 million acres can be utilized as arable land. Of this potential and actual arable area 180 million acres, or 7.4 per cent of the national area, are cultivated as crop land. The other 520 million acres, or 21.3 per cent of the total area, are still waiting to be cleared, or to be brought into agricultural use by fertilization, irrigation and drainage.⁷ The ratio between the cultivated land to the potential tillable land is one to three. Not all those who have made estimates agree with Baker, and his estimate of arable land has been generally held as too high. However, discussions on the problem have usually been confused by the connotation of the term "arable" which should have a dynamic rather than a static implication. Those who criticize Baker for making estimates based primarily upon the agricultural conditions of America fail to realize that China may one day adopt the same scientific methods, equipment and techniques in the agricultural

⁵ Cf., "Climatological Data, Precipitation," *Reports of the National Research Institute of Meteorology, Academia Sinica*, April 1943.

⁶ James Thorp, *Geography of the Soils of China*, (Nanking: National Geological Survey of China, 1936), pp. 507-509.

⁷ O. E. Baker, "Land and Food in China," *Far Eastern Review*, March 1928; and "Agriculture and the Future of China," *Foreign Affairs*, April 1928.

operation that are now in use in the United States.

This explanation does not, of course, imply that Baker's estimate of 29 per cent of arable land for China is not too high. To know precisely how large a proportion of China's physical area is tillable, one must wait upon the results of future scientific exploration. However, basing our estimate on all data available, we feel justified in concluding that between one-fourth and one-fifth of the total area of China can become cultivable. A little more than half of this cultivable area is now under actual cultivation.⁸

From this curious fact, the American reader will naturally raise the following questions. With more than thirty centuries of experience, and with some 350 million farm people engaged in tilling land, why is the cultivation index (the percentage of cultivated land to the total area) even lower than that of a newly developed country like the United States whose farmers number only one-sixth as many as China's? Why is there a vast area of arable land left still uncultivated? Why do the Chinese peasants not reclaim the waste frontiers such as the American pioneer farmers did in the western part of the United States, but prefer to stay crowded together in rather small cultivated areas and tolerate, or rather suffer, a low standard of living? Do they lack the pioneer spirit or are they naturally inclined to be an earth-bound people? In order to answer these ques-

tions satisfactorily, we need to study this matter a little further.

In analysing the problems of land utilization, one should bear in mind that "the earth is the inert and man the active factor in the partnership." It is man who wants to make a living out of land and, therefore, it is he who determines the use to which he wishes to put it one way or the other. Hence, it is natural that different types of living which are represented by social values and institutions will create different patterns of land use. In China, the humanistic type of living, which has been established since the former Han Dynasty two thousand years ago, influences tremendously the way in which the Chinese farmer uses his land.

How does humanism take its rise? Having entered the age of agriculture, man must have first realized the significance of human effort which can achieve tangible results in crop production and in improving livelihood. Incidentally, the regions where the forefathers of the Chinese people lived, worked and raised crops, were in the Wei River Valley and the lower Yellow River valley, both of which are located in the loess area of North China. The loess, very fine silt, makes rich soil and is easy to plow. It is generally agreed among the modern Chinese scientists that the climate of these regions in those early days was not so dry and treacherous as it is today and, of course, the population was not so crowded and the hills were not yet denuded. Quick adjustment of the ancient Chinese people to their physical environment had helped in developing a philosophy in which they stress things on the realistic side, never dream of the "other world" or yearn for complete renunciation, such as is the case with the Indians on the other side of the Himalayas. It is scientifically sound to say: "Religion by which men regulated

⁸ The estimates of cultivated land and arable land not yet cultivated in proportion to national total area made by various experts are listed below:

Estimator	Area Covered	Culti- rated	Arable	Yr.
Bureau of Statistics	Greater China	8.1	-----	1938
Chang, C. Y.	15 Provinces	10.4	-----	1931
Chen Chang-heng	Greater China	7.7	8.5-9.6	1935
Chiao Chih-ming	27 Provinces	12.3	-----	1936
Cressay, G. B.	28 Provinces	11.0	-----	1934
Lieu, D. K.	Greater China	14.8	-----	1926
Nat. Agri. Research Bu- reau	22 Provinces	18.2	8.9	1943

their lives, theories in which they formulated their thought, have always been mainly differentiated by their valuation of this world."⁹

Under the influence of Confucian "this-worldliness" and a realistic view of life, the Chinese in general saves and accumulates wealth to provide for his own old age and for his children. Facing the iron law of biological changes in life, he has to reserve enough material resources, as well as human resources before he becomes infirm and subsequently dependent. Resources in the latter form seem, in many respects, much more reliable and serviceable than material goods. An old proverb says: "Grain is stored against famine; sons are brought up against old age." Since the sons can remain at home and do more work, the Chinese takes greater care of his male baby. Filial piety has, therefore, been inculcated by Confucian scholars as the foundation of all ethics.

The preponderant emphasis on the father-and-son relationship has made the society of China essentially different from that of the West. It is the theoretical basis for ancestor-worship, for the status of woman being lower than that of man, for the brothers and their wives and children living together under the same roof—the big-family system—and also for the persistency of familism and "conservatism." What concerns us here as the important factor affecting the pattern of land utilization is the institution of equal division by all legal heirs of the family's property, especially landed property. This institution has exerted far-reaching influence not only on the size of the farm but also on its operation and use as well.

In China a sizable piece of land has seldom been held by one family alone for

more than a hundred years without being split. The process of the dividing of the family's landed property is interesting and almost unique. At first, the size of the family increases and the acreage of farm (if all members of the family are working hard and are lucky enough) increases accordingly. When the size of the family has become fairly large and the landed property likewise, each member of the family, encouraged by the expectation of acquiring a larger share of the property, endeavors to rear as many male babies as possible, and this standing desire for rearing unlimited babies, plus the centrifugal movement of egotism which is likely to emerge when the family has reached an unbearable size, inevitably brings the family entity to the breaking point. Eventually, when the house becomes divided, the whole tract of land is divided into many small fragments.

This division of landed property has been going on for centuries and China is now confronted with a grave problem resulting from the size of her farms. How serious the situation is can be shown by the following figures. A survey made by the Land Commission in Nanking on 1,534,920 farms in 1935-1936, shows that 24.38 per cent are under 5 mow (one mow is 0.15 acre); 22.60 percent from 5 to 9 mow; 13.75 per cent, from 10 to 14 mow; 8.94 per cent, from 15 to 19 mow; 30.61 per cent are 30 mow and upwards.¹⁰ This means that almost 70 per cent of the farms surveyed are less than 4.5 acres in size!

Another survey made by John L. Buck of Nanking University indicates the same results. Among the 16,786 farms investigated, the median size of the farm area of all farms is 3.31 acres.¹¹ In the part of

⁹ Cf. Joseph Needham, *History Is On Our Side* (London: Allen and Unwin, Ltd., 1946), pp. 7-9.

¹⁰ Data quoted from the *Reports of the National Land Survey*, published by the National Economic Council in Nanking, January, 1937 pp. 22-26.

¹¹ John L. Buck, *Land Utilization in China*, (Shanghai: The Commercial Press, 1937), p. 267.

his book which deals with the fragmentation of land, Buck finds that "there are, on an average, 5.6 different parcels of land per farm. Two-thirds of the farms have from one to five parcels per farm, and over one-fifth have from six to ten parcels per farm."¹²

The scantiness of size of holding and the fragmentation of a farm are only a part of the most important characteristics of Chinese agriculture. Another aspect which may also be considered as influenced by the familistic and humanistic type of living is that the production of the land is almost entirely aimed to meet the needs of human beings. Population pressure may have something to do with this situation, but it is difficult for us to explain why the Chinese peasants in the rugged frontier regions should struggle desperately to plow the slope lands, rather than to raise cattle. In the productive basins and plains, land may be held as too precious to be used for growing food for animals. In the provinces of southwest and southernmost China where the proportion of cultivated land amounts to hardly one-tenth of the total physical area, the inhabitants of Chinese origin prefer to let the rugged lands and mountain ranges lay idle while they pour human sweat like water in digging up trees, making terraces, and tilling wherever possible to raise a handful of food. On the other hand the minority races of non-Chinese origin in these areas engage in cattle-raising and pasturing.

To cite further facts for illustration: Of the area cultivated for crops, it was estimated by C. Y. Chang that 82 per cent of the farms are used strictly for food production.¹³ Buck points out emphatically that "the most important characteristic in the use of farms in China

is the large proportion of 90 per cent in crops and the extremely small percentage of 1.1 in pasture, including wooded pasture. Less than six percent of the farms have any pasture.¹⁴ All these figures show the simple fact that the total amount of land cultivated is used essentially for feeding human beings. From the scanty proportion of pasture land we may readily see that livestock-raising has no place in the Chinese economy in spite of the fact that working animals, especially the horse and mule in the North and the water-buffalo in the South, could enlarge the acreage of cultivation and increase the efficiency of production. This is the opposite of the economic condition of the peasant in Europe. "The poor peasant of European tradition has a cow, but no land; the poor peasant in China has land, but no cow."¹⁵ Since Chinese civilization has developed preponderantly through the humanistic side which stresses social stability, the materialistic improvement is simply ignored. R. H. Tawney is quite right in saying that "the primary concern [in China, during a long period of history] has been, not to secure the maximum return for the minimum effort, but to distribute limited and unexpanding resource among the largest possible number of human beings."¹⁶

We have, thus far, portrayed a picture of the spirit and pattern of Chinese civilization which has affected land utilization rather than to have answered the questions raised previously. However, it is our conviction that no land use problem can possibly be separated or isolated from its national background. We hope the preceding discussion has furnished a logical introduction to substantiate our reasoning and evidence in explaining seemingly curious facts.

¹² *Ibid.*, pp. 181-184.

¹³ This figure is cited from C. Y. Chang, *General Conditions of Agriculture in China*, (in Chinese) 1932.

¹⁴ J. L. Buck, *op. cit.*, p. 173.

¹⁵ R. H. Tawney, *Land and Labour in China* (London: George Allen and Unwin, Ltd. 1932), p. 28.

¹⁶ *Ibid.*, p. 47.

Owing to the relative lack of livestock the work on the farm has to be performed by human hands, especially in the central and southern parts of China. Judging by the modern standard of efficiency, human labor, after all, is primitive, inefficient and slow-moving. With the help of simple tools, it can perform only a limited amount of work in a rather long period. Hence, the amount of labor needed for the operation of a large-sized farm is correspondingly enormous. To adduce some evidences: "The man-equivalent required to grow one acre of wheat is 26 days, compared with 1.2 days in the United States; one acre of cotton 53 days, compared with 14 days in the United States; one acre of corn 23 days compared with 2.5 days in the United States."¹⁷ Under these circumstances it is true that no family can get wealthy without possessing a large number of laborers.

In spite of the fact that manpower is unlimited in China, labor outside the family is difficult to hire during the busy seasons when it is needed everywhere. Besides, a hired farmhand's work is not always faithful and reliable. So familism, which encourages the rearing of more male children and also encourages brothers, their wives and sons, and other relatives to live together, appears most attractive and effective to those who are engaged in agriculture.

It is farm work which calls forth the need for human labor. The curious fact is that, when there is a surplus, it becomes an obstacle to progress, particularly to the progress of agricultural techniques. The invention and adoption of farm machinery in the West has always been for the purpose of saving labor. Under the condition of over-supply of labor, the wage has reached so low a level that the

laborer enters into direct competition not only with the labor-saving machinery but also with working animals. This kind of struggle for existence is impressive but tragic. Often in the past the rickshaw coolies in some large cities in China rose in organized gangs and smashed the streetcars and buses, because the modern forms of transportation had ruined their business, and the very means of livelihood. In the irrigated regions, for instance, Hsiao-tung Fei found out that the villagers did not like to use the air pumps run by motors to irrigate their paddy fields. The reason for this is that "the labor saved by the machine has not found any productive use." Many genuine farmers were even terrified by the fact that "someone who was lazy and relied upon the air pump had ruined himself in the gambling house in the town because he had nothing to do."¹⁸

Without mechanization, lacking working livestock, and relying mainly upon manual labor for agricultural production, China is confronted with many difficulties in cultivating her physically arable areas. There are two basic factors involved, for the discovery of which we owe so much to O. E. Baker.¹⁹ The first of them is the time element.

We have mentioned previously that each plant has its own length of growing time. That is to say each plant needs its own definite seasons of seed-sowing, ploughing, weeding, and reaping. All of these steps must be done at the proper time; otherwise it will have serious effects on the production of the crop. Take rice for an example: in much of the Yangtze Valley the seed-sowing season lasts about two weeks in the spring. If the seeds are sown earlier than this period, the tender shoots will often be killed by frost; and, when the period has passed, there is no

¹⁷ J. L. Buck, *op. cit.*, p. 14.

¹⁸ Hsiao-tung Fei, *Peasant Life in China*, (London: G. Routledge and Sons, Ltd., 1939) pp. 161-162.

¹⁹ Cf., O. E. Baker, "Agriculture and the Future of China," *Foreign Affairs*, April 1928.

more need to plant them for, if the farmer does plant, the killing frost of the autumn will surely come before the harvest. In certain parts of the Yunnan Plateau, there is a special variety of rice whose characteristics are such that the yield per plant is definitely larger than that of the ordinary rice but, when it ripens, the period of harvest is limited to two weeks. After this period, all ripe grains will swiftly loosen and fall to the muddy field. This seasonal nature, which may be somewhat shorter or longer, is a phenomenon common to nearly all plants. So it appears that workers on a one-crop farm are very busy in certain seasons and quite inactive at other times.

The area a farmer is able to operate is determined by the labor available in the peak seasons. The length of each season is, as in the case of China, determined by the monsoon, and no human effort can alter it. If the monsoon sets in too early or too late it means a poor year, sometimes even famine, to the agricultural people who can cope with nature only with human labor.

Under normal climatic conditions, an average farmer in China can manage to operate, from field preparations in the spring to harvest in the fall, only a minute area. When the busy season comes he has to call up all his labor reserves to fight on the agricultural front. The aged, the child, and the female members of his family cannot be expected to contribute much strenuous farm work. A field study made by Hsiao-tung Fei in a village near Lake Tai, shows that it takes one adult peasant 35 days to prepare seven mow (a little more than one acre) for cultivation with the aid of a water-buffalo; and it takes two weeks to trans-

plant rice shoots to one acre of paddy field.²⁰ In another field study made in a village in the central part of Yunnan in 1938-1939, Fei found out that a working man assisted by a female laborer (usually his wife) can transplant the young rice-shoots within the seasonal limit of 30 days, into an area of only ten mow, or less than 1.5 acres. In the preparatory work of breaking, refining and levelling the soil, an adult farmer can manage in 45 days only 0.3 acre. In harvest, with his wife assisting, he can reap, within the seasonal limit of 30 days, the straws and the grains of an area of 1.5 acres.²¹ With irregular help from his neighbors in the busy season, an adult farmer, it is generally agreed, can operate half an acre of rice; and, assisted by his wife and children, he can operate, within the time limit set by the monsoon, one acre at most. This quantitative limitation of area may be considered as the *extensive margin of cultivation*. Without improvement of agricultural equipment and technique there is little hope of shifting this margin to any considerable extent in Chinese agriculture.

The other factor regarding agricultural operation in China is the amount of produce from the farm which the farmer needs to feed his family. This is also a realistic matter that no scientist can overlook.

First let us find out the size of the average rural family. China has been well known for her large-family system and clan organization. Yet, judging from the fairly reliable figures based upon local censuses taken in various provinces and made by either official or research institutes, we feel quite confident in concluding that the average size of a peasant fam-

²⁰ Fei, *op. cit.*, pp. 161-165.

²¹ Fei, *Earthbound China* (Chicago: University of Chicago Press, 1945) Ch. II, pp. 34-40. The difference of figures between these two field studies, according to Fei's explanation, is due to the following reasons: (1) the unit of the *mow*

may vary to some extent; (2) in Yunnan, the density of rice stalks per field is definitely larger than in the area around the Lake Tai; and (3) the figures of the field study in Yunnan are based upon the work of an employed laborer who may not work as hard as an owner-farmer.

ily in China today is between 4.5 and 5.5 persons.²² The high infant mortality, due to malnutrition and lack of medical care, is only partly responsible for the low average size of peasant family. The real explanation is found in the Malthusian law of population, namely, the population pressure on subsistence. When adult members of the family discover the prospects on the farm to be more and more gloomy and hopeless, they leave their homes and go to other places seeking jobs. They may become soldiers, coolies, outcasts, or even bandits. It is still quite true that the peasant favors having male babies and living with his near blood-relatives. But the population pressure has hammered the family size down to the minimum limit.

Now then, the second problem is how much food is needed per family under the prevailing standard of living. (The lowest margin on which a peasant family can live.) The following estimate is only, due to lack of statistics, an approximation.

In making calculations of the peasant family needs, we must keep in mind the fact that the peasant has to purchase necessities other than food. On certain festival days, he may have to squeeze some money from his already drained purse for recreational or religious purposes. And in addition, he has to pay taxes. All these expenses must be met directly or indirectly by a certain share of products gathered from his farm. On the other hand, the income of a peasant varies from crop to crop, from region to region, and also from year to year. Existence of these divergencies complicates our calculation. For instance, in the southernmost region, most farms yield three harvests a

year; in the Yangtze Valley, two; and, in North China, three crops in two years.

Furthermore, the crops raised in these different regions, due to climatic conditions, are quite different. Even in the same region, or on the same farm, the peasant usually raises a number of different plants in order to meet his domestic needs. In North China, the peasant grows peas and lentils between the stalks of corn or kaolinang, but, in the irrigated areas, he plants rice in the watered field and soy beans or other crops on the dry terrace. Straw and even roots are used for fuel. The refuse from food is used to feed fowls and pigs. All these items contribute something to the income of the peasant, though not much.

In order to illustrate our point and to make an estimate of some sort, let us consider the economic conditions of the peasant's family in the rice region of the lower Yangtze Valley for an example. It has been estimated by many experts in China that the amount of husked rice required per year by an adult is seven bushels. Suppose he has a family consisting of a wife and three children within the ages of 5 to 15, (or one aged parent and two children, as is generally the case) and also suppose the consumption of food per year by these four members is equivalent to an amount required by 2.2 adults. Thus the total annual amount of rice needed by an average family of five members is approximately 22.4 bushels. This figure does not include all food stuff. If vegetables, meat, lard, and all items of diet are taken into account, they will be equal to 25 to 30 per cent of the rice needed to feed the family. Adding these two items together, the amount of rice

²² The data we have in hand are the weighted arithmetic averages of the following *hsien* (counties): (a) In Kiangsu Province, Kiangning 4.44, Kiangyin, 4.70, Chuyung, 4.93; (b) in Chekiang Province, Wuhing 4.99; Lanshi, 4.88; (c) in Fukien Province, Changlo, 4.57; (d) in Hopei Province,

Tinghsien, 5.58; (e) in Shantung Province; Tsouping, 4.92; and (f) in Yunnan Province, Chengkung, 4.41, Kunming, 5.00, Kunyang, 6.17, Chinning, 4.58. Buck takes the average size of 5.21 persons per family as representative, see *Land Utilization in China*, p. 369.

required annually by a family of five is somewhere near 30 bushels.²³

In the foregoing discussion, we have reached the conclusion that in the rice region a peasant with the assistance of his family can, at most, operate an acre of land within the seasonal limit set by nature. So, it is quite apparent that he has no other alternative except to work as strenuously, or rather as desperately, as he can in order to secure the 30 bushels of rice required per year to feed his family from whatever may be the size and soil of the farm under his cultivation. This amount of thirty bushels of rice per farm per year which must be reached by a Chinese farmer may be regarded as *the intensive margin of cultivation*.

This calculation seems to oversimplify a complicated problem. The peasant needs not only food, but many other necessities and, at the same time, he reaps from his farm not only rice but other crops and many by-products as well. The reason for making the sweeping generalization is, however, to indicate the minimum amount of product per acre per year which the peasant must scratch from his paddy field in order to support his family under the prevailing standard of living. When we turn our attention to reality, this is exactly the case. In the lower Yangtze Valley, the annual production of rice per acre averages about 40 bushels. Accepting our previous calculations, it is obvious that an average peasant family of one adult man and one adult woman and three children (or one aged parent and two children) can get

along with three-fourths of an acre of farm land.

If the farm he owns is fairly fertile, the peasant will find it easier to feed his family. But life will be extremely hard when his paddy field produces less than 30 bushels annually per acre. However, the lowest yield of rice per acre in this region, according to Buck's investigation, is 22 bushels a year.²⁴ How can a peasant family actually live on this sort of farm? In our opinion, there are three possibilities: (1) The peasant may have no aged parents or young dependent children to be cared for in his family. (2) He may possess some fairly fruitful land in compensation for the poor. (3) The last, but the most tragic possibility is that he lowers his family's living to or even below the level of starvation.²⁵

We have, so far, analyzed only the physical factors which affect both the intensive and extensive margins of cultivation in China. However, some social factors which also carry weight in determining the effect upon the margins of cultivation are political disorder, high taxation or exaction, and rack-rent, which cannot be ignored or minimized. It is interesting to note that within the recent 60 years (i.e., from 1873 to 1933) the estimated indices of the cultivated land show only a slight increase (one per cent;) and during the last 40 years of the same period no change at all.²⁶ This fact indicates that the increase of acreage in the frontier regions has been constantly nullified by the shrinkage of the cultivated areas in the old sections of the country. Depletion of soil may account for part of

²³ In regard to the method of converting female, aged, and child members of the family into the adult unit, we adopt Atwater's schedule but revised to some extent in order to meet the Chinese situations. For further reference, Cf., D. K. Lieu, *A Study of Rural Economy of Wuhing, Chekiang* (Shanghai: The China Institute of Economic and Statistical Research, 1939), Appendix I, pp. 107-109; Fei, *Peasant Life in China*, pp. 125-128 and his *Earthbound China*, p. 51.

²⁴ Buck, *op. cit.*, p. 223.

²⁵ In regard to other parts of China, this basic principle of calculation on the two margins of cultivation can be figured

out exactly on the same basis. For instance, in the wheat region of the North, the average size of the farm is double or even treble that of the South. Because of this, the peasant generally raises livestock to help his farming operation. However, since the climatic conditions are unfavorable and the yield of the land is relatively low, the life of the peasants is by no means better off than that of their southern neighbors.

²⁶ Estimated by the National Agricultural Research Bureau, see *China Handbook, 1937-1943*, p. 548, Table II.

the latter, but undoubtedly social factors are the most responsible agents in reducing, or rather devastating, the cultivated lands and equally so in preventing the reclamation of new arable land in the frontiers.

Through the foregoing discussion and analysis, we are in a better position to tackle the seeming puzzle regarding the problems of land utilization in China.

Wherever and whenever agriculture is based upon human labor as a fundamental source of energy, and human labor is characterized by its slow-moving, primitive and inefficient nature, it cannot expand the extensive margin or shift the intensive margin fixed by human needs. As far as the humanistic pattern of land use goes, the Chinese peasants can till only such areas of arable land as can yield a relatively high amount of produce; so the present situation of Chinese agriculture is the only natural result. It is conceivable that the high-yield and easily-plowed lands in all countries are limited to certain deltas, basins and plains. That is why in China the centers of population are clustering and congesting in some small but rich regions. Wong Wen-hao once estimated that more than 83 per cent of the Chinese population is now crowded into five districts, the area of which is less than 17 per cent of the national area.²⁷

Through more than thirty centuries of farming experience, the Chinese peasants have learned fairly well that they must be satisfied with the small but fertile lands which are now under cultivation. They certainly do not like to stay crowded together to suffer the low level of living and hardships of work but, with the intensive margin and the extensive margin set so close together either by nature or by human needs, they are practically

shackled in the endless chain of a vicious circle and cannot reclaim the idle and low-yielding frontiers. A number of peasants have gone to undeveloped regions and cleared the waste lands there, but they failed to make a living or were set back by merciless nature. This is the only reasonable explanation why the Chinese peasants have, up to the present, left a considerable amount of arable area untouched or lying idle.

In mechanization, the first effect will be that the modern fast-moving machine "tends to speed up cultivation and thus renders easier the establishment of a balance between the labor and the growing times." And "machine labor," says E. W. Zimmerman, "widens the choice of crops, reduces the minimum time required for field operation, and permits agriculture on land which otherwise could not support human settlement. Because of its large-scale operations and extraordinary capacity to cover large areas, highly mechanized agriculture can successfully exploit land which yields low return."²⁸

The striking difference between human and machine labor is obvious. Since human labor in China is plentiful and the place where it can be utilized gainfully other than in agriculture is limited, the peasant puts all his physical labor into the small area of farm land on which the livelihood of himself and his family depends. Chinese agriculture, judging by American criteria, is largely gardening. All kinds of work are performed carefully and delicately. No weeds can be found on the farms. In the rice-producing regions, the irrigation system is arranged so carefully and meticulously that no water is wasted in the fields. The rice stalks are transplanted evenly and tidily. The fertilizers are made from human and

²⁷ Cf. Wong's article on "Population Distribution and Land Utilization in China," *Independent Review*, Nos. 3 & 4, 1935.

²⁸ E. W. Zimmerman, *World Resources and Industries*, (New York and London: Harper and Brothers, Publishers, 1933), p. 91.

animal manures, ashes from burnt plants, and silts and sediments deposited by the brooks and streams. In the mountainous regions, in order to gain new plots for tillage, the smallest patch of field is terraced. "In China, the earth is utilized as it has never been elsewhere!"

In coping with nature by manual labor only, the Chinese peasants have done their best and can, under the present

circumstances, go no further. The only solution possible in the present impasse of population and cultivable land, of hardships, poverty, and low standard of living, depends, as we see it, upon mechanization and modernization of agriculture. This is a tremendous task which can be carried out gradually but steadfastly by a well-planned and adequately-administered government program in the future.

The Agrarian System of the Spanish American Colonies†

By DAVID WEEKS*

THE great distances of the Hispanic American colonies from the mother country and from each other, the primitive state of technological development during the colonial period, especially means of transportation, and the existence of a new situation created by the presence of semi-civilized and savage indigenous races resulted in a lag for centuries in certain aspects of institutional progress. The same major social and political trends which were taking place in Spain were present in America but were retarded. Assignment of military responsibilities along with titles to land and labor was revived and the separation of jurisdictional powers from proprietorship in land was still incomplete. Furthermore, the increasing freedom enjoyed by the agricultural workers of Spain was not extended to the indigenous races of America.

Among the Indians living under the institutions of confederacies such as the Aztecs, Mayas, and the Incas, the Spaniards found a source of manpower subject to reduction to semi-serfdom corresponding to the Spanish *solariegos* of the Middle Ages. From these tribes also they were able to purchase slaves. Although many of the Indians died prematurely and probably countless others were prevented from being born, a sufficient number of them survived to provide the major source of labor used then and now in mining and in agriculture. In time, a mixture of races supplied the artisans used in the trades. This reduction of the Indians to an important eco-

nomic component of the population was in great contrast with the situation in the United States where there has been a more complete extermination of the Indians and a disinclination to use, or the impossibility of using, the remnant Indian population in production.

Settlement of the tropical Spanish colonies of America brought a leisure-loving people from Spain at a time when it had only begun to emerge from a strange medieval mixture of communism and feudalism. The colonization of the United States, retarded a century behind that of the Spanish colonies, was carried out in a temperate climate by a working class of people having the customs of a modern and northern Europe.

For a time the isolated Spanish settlements enjoyed a semi-feudal independence under the *Adelantado*, *Cabo Principal*, *Alcalde Mayor*, *Corregidor* or *Alcalde ordinario*, who exercised jurisdiction jointly with the military government, subject to the Crown. With possibly the exception of the *Adelantado*, they were also subject to the viceroys, but frequently were separated from them by months of travel. The *Adelantado* or *Cabo Principal* was head of a city or new settlement of first rank. If he should have complied as he should with his assignments, established some forts, and founded three cities with a church and provision for civil administration, then he was given charge of the discovery, with civil and criminal jurisdiction, and limited or perpetual tenure, whichever it seemed feasible to concede

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America from their ancient European beginnings to their present-day pattern in Bolivia.

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to him. Also he might either receive a salary from the Royal Treasury or obtain his remuneration from the fruits of the land, with vassals and "title of *Marquis*, or other, with which to honor his person and house."¹

Although the colonial laws did not specifically provide for the title of *señorío*, they did include flexible laws providing for the creation of dominion identical in type to the Spanish titles by that name, if perpetual, or *tenencia*, if limited in time, duration of the grant remaining at the discretion of the Crown.

Francisco de Toledo, famous viceroy of Peru from 1569 to 1572, succeeded, it seems, in obtaining royal acquiescence to his recommendations that there be established in each town of Spaniards a dozen men who would be granted lands and populations *en feudo perpetuo*. Matienzo, judge of the *Audiencia de Charcas*, (modern Bolivia), writing during the years 1560 to 1573, supported Toledo in these recommendations of grants of populated areas in perpetuity and in his *Gobierno del Perú* he indicated a number of different types of such grants, stressing at all times the increased royal revenue which would result from their inauguration and the general improvement which would be promoted thereby in the colonies, proposing grants without jurisdiction in general but a few with jurisdictional powers.² As the settlements became pacified and the Indians were brought under subjection, royal military organization superseded the feudal armies of the explorers which, although theoretically functioning under royal authority, were privately financed and were frequently found carrying out their campaigns in actual defiance of royal orders.³ At the same time, these

grants of individual jurisdiction with both vassals and lands in perpetuity were superseded, about 1600, by a complete governmental system. Of the medieval agrarian titles which were transplanted in the New World, only the *encomienda*, granted for a specified period of lives, and the *mayorazgo* continued to be important over a considerable space of time.

From these remnants of feudal and prefeudal times, and from lavish concessions and usurpations of land, later confirmed by prescription and by legislation known as *composición de tierras* (composition of lands), there emerged a system of farming, an agrarian patronage, even embracing serfdom, of a type nobody knows how old. Slavery also, both of Indians and of Negroes, had its place in the colonial agrarian pattern. Its permanent effects, however, were more upon racial composition than upon institutions, unless it might be included as one of the causes which perpetuated the large estates. Slavery was much more important in its effects in the West Indies and in Brazil than in the other countries of Hispanic America. Indian slaves had been emancipated in the Spanish colonies by 1550.⁴

Early Colonial Agrarian Organization

The Spaniard, to subsist in the new American colonies, could work the land himself, congregate Indians to farm under his direction, or he could demand that the Indians supply him with food and other necessities from their own farming operations. Because of the tropical climate, Spanish tradition, and the existence of a conquered race that could be subjected to labor, the first alternative was at once eliminated. Spanish colonial,

¹ *Recopilación de Leyes de los Reynos de las Indias*, Segundo Ed. (Madrid: Antonio Balbas Año de 1756). Leyes 8, 9, 13 and 23, tit. 3, lib. 4, and Ley 2, tit. 12, lib. 6.

² Licenciado Don Juan Matienzo, *Gobierno del Perú* (Buenos Aires: Compañía Sud-Americana de Belletes de Banco, 1910), pp. 57-62.

³ *Recopilación, op. cit.* Ley 2, tit. 5, lib. 4.

⁴ Lesley Byrd Simpson, "Studies in the Administration of the Indians in New Spain, IV Emancipation of the Indian Slaves 1548-1553," *Ibero Americana*: 16 (Berkeley: University of California Press, 1940), pp. 3-14.

economic, and social history is a story of a struggle between the other two. Both survived throughout the colonial period.

Separate Partitions of Lands and of Indians. As early as 1497, Columbus had begun to distribute land among the members of his new colony on the island of Española. These grants were continued by his successors. In 1511 three *licenciados*, who made up the first court of appeal in the New World, brought with them orders from the Crown instructing Diego Colón, son of Columbus, then governor of the island, to make partitions of land to them. Thus was begun the appropriation and distribution of lands among the Spanish discoverers and conquerors. This partition of lands was called *repartimiento de tierras*.

Columbus apportioned Indians to those to whom he had given lands, and petitioned the King to be allowed to force them to work, but did not wait for a reply to put forced labor into effect. The three *licenciados* who had received land from Diego Colon were given two hundred Indians each. Indians were assigned similarly to other Spaniards. This partition of Indians was called *repartimiento de Indios*. These lands and Indian laborers were brought together under the management of the Spaniard who sooner or later made the assumption that they were, or ought to be, his property.

The ruthless practices of the early discoverers were soon brought to the attention of the Spanish rulers, who set about to give order to the colonial procedures in these matters. A *repartimiento de tierras* was claimed to be the prerogative of the Crown and therefore became a *merced*.

The *repartimiento de Indios* underwent some evolutionary changes at the hand of Ovando in 1503 and, by authority of Isabella, became the *encomienda*.⁵ The laws of Burgos of 1512 indicate that up to the time of their promulgation there had been a number of ways in which Indians had been partitioned among the Spaniards.⁶

One of the earliest royal decrees, issued first in 1513 and reiterated throughout the sixteenth century, provided for both the partition of lands and of the services of the Indians. The lands were granted in perpetuity; the services of the Indians by *encomienda*.⁷ The latter, restricted to the partition of personal services, was separated from the granting of lands which, from the beginning, following the trends of that period in Spain, were partitioned as alienable, heritable estates. Zavala stressed the legal differentiation of these two types of partition when he concluded "the *encomienda* cannot have been the direct precursor of the modern *hacienda* . . .," and when he insisted that it did not provide a legal basis for a title to land, nor could it be considered a form of land tenure.⁸ McBride, however, speaking of Chile, concludes that "the *encomienda*, indirectly at least, became a main source of the great landed estates that have characterized the country for several centuries."⁹ These apparently opposite points of view can be reconciled when it is recognized that the *hacienda* includes more than land alone and that the elements of the *hacienda* are the "property and the persons."¹⁰

It appears that the American *encomienda* was an important and essential but not

⁵ Lesley Byrd Simpson, *The Encomienda in New Spain* (Berkeley: University of California Press, 1929), pp. 30-31.

⁶ Lesley Byrd Simpson, "The Laws of Burgos of 1512," *Ibero Americana*: 7 (Berkeley: University of California Press, 1934), Part I, pp. 1-27.

⁷ *Recopilación*, op. cit. Ley 1, tit. 12, lib. 4.

⁸ Silvio Zavala, *New Viewpoints on the Spanish Colonization of America* (Philadelphia: University of Pennsylvania Press,

1943). See also his *De Encomiendas y Propiedad Territorial en Algunas Regiones de la América Española* (Mexico: Antigua Librería Robredo de José Porrúa e Hijos, 1940).

⁹ George McCutchen McBride, *Chile: Land and Society* (New York: American Geographical Society, Research Series No. 19, 1936), p. 90.

¹⁰ *Encyclopedia Universal Ilustrada* (Barcelona: Hijos de J. Espasa, 1925), Tomo 27, p. 466.

the only component of the colonial agrarian system in its formative stage, at least during the sixteenth century. The fact that it declined during the last half of the colonial period does not detract from its importance in establishing the caste system of management and labor which, together with the land policy of the times, created the agrarian system inherited by the republics. The dominion both of land and of laborers was jealously held in the Crown. The fact that different agencies and individuals were assigned the tasks of distributing these factors of production, the one in perpetuity, the other for a specified period of time, does not indicate that they were independent institutions. In fact, neither could have existed without the other. Once the agrarian pattern was set, the changing of the laws merely forced the landlords to seek new devices to maintain it. Powerful political forces defied the decrees of the Crown, the preachings of Christian leaders, and finally the military might of Spain, in preserving its broader outlines, much of which remains today.

Characteristics of the American Encomienda

There have been two basic and conflicting concepts of the nature of the *encomienda* as it developed in the American colonies. The first of these concepts attained dominance, though not exclusive of the other, from the time of Ovando's administration of Española (1502-1509) until the promulgation of the laws of succession in 1536, and the "New Laws" in 1532. In the law of 1513 (mentioned above) providing for the partition of lands, the King of Spain ordered the governor, or other person having royal authority, to commend the Indians to those

who had colonized the lands according to the established standards. Thus the Indians, according to a tradition going back into medieval Spain and even into ancient Rome, were to be given in trust to the *encomendero*, the one receiving the concession and assuming the responsibilities of protecting them and instructing them in the Christian religion and in European ways of life. In return, by implication, and with precedent in the authorization given by Isabella, the *encomendero* was to receive the services of the Indians in repayment for his patronage. To facilitate the establishment of this relationship of *encomendero* and his subject, which has been compared by Solórzano to the relationship between *patronus* and client of ancient Rome, the Indians were to be resettled in "congregations" near the settlements of the Spaniards. Thus was initiated the system of patronage which has characterized agrarian organization of Hispanic America from early colonial times to the present day.

Another concept of the *encomienda*, at first inefficiently enforced but later becoming its more predominant characteristic, was that in theory the thing granted to the *encomendero* was the tribute due from the Indians to the Crown. This concept was not different from that of the Spanish *encomienda* after it had been divested of its jurisdictional powers. The *encomienda* granted with this concept in a sense was a property right in a portion of the usufruct of the lands of a given populated area, for a specified limited period of time. The emolument of the *encomendero* having been paid, the indigenous community could keep for itself all the products of the land which it occupied, except the taxes which were established in time.¹¹ The tributes of large *encomiendas* were divided among a number of meritorious citizens. A specified village of Indians was required to pay to one

¹¹ Don Juan de Solórzano y Pereyra, *Política Indiana, Corregida e ilustrada con notas por el Licenciado Don Francisco Ramiro de Valenzuela* (Madrid, Buenos Aires: Compañía Ibero Americana de Publicaciones, 1930), Tomo 2, lib. 3, p. 15.

encomendero and to one or more others a designated tribute, or *pension*—products of their lands and labor.¹²

The later American *encomienda* was thus the direct descendant of its Spanish prototype with changes in accordance with trends in Spain and new conditions in America. This view differs from that of Chamberlain who holds that the "origins of the repartimiento-encomienda of the Indies are to be sought not in any one of the Castilian grants, donations, institutions, and forms . . . but in these latter as a whole."¹³

Territorial Aspects of the Encomienda. Various writers have discussed the territorial or geographical aspects of the *encomienda* but conclusions concerning the significance of land areas associated with *encomienda* have been at times diametrically opposed to one another. Confusion also seems to have existed at times in the minds of those making such grants and of the *encomenderos* who may have taken advantage of the fact that by its nature the *encomienda* had to have geographical limits. Much usurpation of land within these limits is charged to the Spaniards.

McBride, citing Amunategui, refers to territorial *encomiendas* (*encomiendas territoriales*) distinguishing them from the grants of the services of Indians unattached to lands, giving examples in central Chile of such "definitely agrarian concessions, where it is clearly stated that the grant was a territorial one, consisting of the Indians and their land."¹⁴ Admitting

that the labor supply provided was of little value and that the numbers of Indians within these concessions had greatly diminished, he maintains that such *encomiendas* had established types of rural holding that had become the basis of the most desirable *haciendas*. They had brought the land into possession of the Spaniards thus giving a permanence to Spanish occupation. "In most, if not all of them, the Spaniards had completely replaced the Indians as owners of the soil."¹⁵

Zavala, on the other hand, indicates the usual pattern of ownership within the boundaries of a single *encomienda*. He states that there "could be found lands held individually by the Indians; lands held collectively by the villages; Crown lands; lands acquired by the *encomendero* through a grant distinct from his title as *encomendero* or affected by his right to the payment of tribute in agricultural products; and lastly, lands granted to Spaniards other than the *encomendero*."¹⁶

There were a few *encomiendas* in which a part of the usufruct of populated areas was partitioned in perpetuity, notwithstanding the long acceptance of this title in Spain as a grant of specific duration. It seems that grants of this type in perpetuity all but succeeded in becoming generally established in principle in Guatemala as early as 1530, in New Spain in 1546, in Peru in 1558 and again in 1572.¹⁷ Priestley notes payments of levies against tribute revenues to pay inheritances to holders of perpetual *en-*

¹² Lesley Byrd Simpson, "Studies in the Administration of the Indians of New Spain, No. 7, VII The Civil Congregation," *Ibero Americana* (Berkeley: University of California Press, 1934), p. 31.

Roberto Levillier, *Don Francisco de Toledo, Virrey del Perú 1515-1572* (Buenos Aires: Colección de Publicaciones históricas de la Biblioteca del Congreso Argentino, 1935), Tomo I, pp. 254-255.

Recopilación, op. cit. Ley 28, tit. 8, lib. 6.

¹³ Robert S. Chamberlain, "Castilian Backgrounds of the Repartimiento-Encomienda," *Contributions to American Anthropology and History*, Publication No. 509, Vol. V, Article 25, p. 45, Carnegie Institution of Washington, Washington, D. C. This work contains a valuable bibliography.

¹⁴ George McCutchen McBride, *The Land Systems of Mexico*, (New York: American Geographical Society, Research Series No. 12, 1923), p. 45.

¹⁵ George McCutcheon McBride, *Chile: Land and Society* (New York: American Geographical Society, Research Series No. 19, 1936), pp. 72, 73, 87, and 88.

¹⁶ Zavala, *op. cit.* p. 83. Italics not in the original.

¹⁷ Don Juan de Solórzano y Pereyra, *Política Indiana, Corregida e ilustrada con notas por el Licenciado Don Francisco Ramiro de Valenzuela* (Madrid, Buenos Aires: Compañía Ibero Americana de Publicaciones, 1930), Tomo 2, lib. 3, cap. XXXII.

comiendas as early as 1577 and as late as 1791.¹⁸ A limited number of *encomiendas* were issued in New Spain for three, four, and even five lives. The *encomiendas* of two lives, however, remained after 1536 as the characteristic form, and in 1637 a decree was issued that confirmed the intent of the Crown on this matter requiring that in New Spain as in other provinces *encomiendas* should be issued for two lives.¹⁹ By the laws of succession in 1536 the *encomienda* was transformed into a system of primogeniture. There would be only one succession, however, and that to the eldest son. The order of succession if there were no sons changed with the passage of time, but the widow, her husband, if she remarried, the eldest daughter and the grandson each came into the succession in case those of a higher grade were not in a position to present their claims.²⁰

The "New Laws" of 1542 succeeded in nullifying grants in *encomienda* but they were again revived in 1547 with new arrangements for the protection of the natives,²¹ and with more specific determination to enforce it "as a right to receive the tributes of the Indians by royal grant." The services of the Indians were not to be used against their will nor without compensation. Nor were they to be used for other than that which was recognized as a public necessity. After the "New Laws" had been passed and amended the *encomenderos* obtained their old objectives by two devices, the commuted tribute and a new type of *repartimiento*.

Commutation of Tribute. By commuting the tributes into an equivalent value in personal services (after 1540 the reverse

process was also possible) the *encomenderos* were able to restore their economic situation almost to the status of the *encomienda* when personal services and not tribute were the thing granted. Neither in the tributes nor in the Indians did the *encomenderos* have any right in property because this right was vested fully in the Crown. Certain laws passed later, however, seemed to be in direct conflict or were so interpreted that the Indians as well as tributes were conceded and their persons subjected apparently to true possession, dominion, and property. In 1633, a very stringent decree was issued prohibiting the substitution of personal services for tribute which was required to be paid in money or in kind. This law was modified later, however, (1721) so that if the Indian voluntarily wished to serve the *encomendero* the number of days of the year which were sufficient to pay the tribute it might be adjusted before the *Cura*, *Protector*, or *Cacique* as appeared most convenient.²²

Decadence and End of the Encomienda. The *encomienda* system declined during the latter half of the colonial period and just before the end of the eighteenth century ceased to exist. The first attempts to abolish the *encomienda* system had been made in 1518, 1523, and 1530. These were countered, however, by clamors from those who emphasized the importance of the *encomienda* because of its necessity for providing a food supply, promoting economic development, providing public revenue, and rewarding the *conquistadores* and *pobladores*. As early as the beginning of the seventeenth century attempts had been revived to discontinue the system. In 1602, 1612,

¹⁸ H. J. Priestley, *José de Gálvez, Visitor General of New Spain (1765-1771)* (Berkeley: University of California Press, 1916), p. 325.

¹⁹ *Recopilación*, op. cit. Ley 15, tit. 12, lib. 6.

²⁰ *Recopilación*. Ley 1, tit. 12, lib. 6.

Solórzano. Tomo 2, pp. 187-206.

Simpson. *The Encomienda in New Spain*, p. 179. The law of 1536 was amplified by those of October 1545, February 1546, March and April 1552, and May 31, 1562.

²¹ Simpson, *The Encomienda in New Spain*. pp. 179-180. Solórzano. Tomo 2, pp. 10-11.

²² Solórzano. Tomo 2, cap. I, lib. 1; cap. III, lib. 3. *Recopilación*. Ley 27, tit. 8, lib. 6.

and 1718 royal *cédulas* were enacted prohibiting the regranting of *encomiendas* which had reverted to the Crown. Bancroft and McBride give 1721 as the date of the *cédulas* which put an end to the *encomienda* system but McBride has stated that it took fifty years longer to put the change into effect. Priestley reports payments of tribute to holders of *encomiendas* in New Spain as late as 1791, the year reported by McBride as the end of the *encomiendas* of Chile.²³

The New Repartimiento

During the second half of the sixteenth century the assignment of labor was transferred from the arbitrary caprice of the *encomendero* to the *jueces repartidores* of the Royal Government and later to the common judges of the communities. These justices assigned laborers in their turn for shorter or longer periods of time under a system that was variously called *cuatequil* in New Spain, *la semana* in New Mexico, and *mita* in Chile and Peru, but everywhere it was called *repartimiento*, that being the generic term for all types of partitioning or distribution whether it might be persons, land, or supplies and equipment.

But the *encomienda* remained a part of the system, the *encomenderos* and *vecinos* (members of the municipal corporation) receiving their assignments of labor through the new *repartimiento*. The *encomendero* received his labor without cost to himself up to the extent of his grant. Beyond that he paid current wages. The ordinary *vecinos*, not having *encomiendas*, paid wages for all of their labor. This overlapping or interlocking of the functions of the *encomienda* and of the labor *repartimiento*, especially in view of the fact

that their scope was not coextensive, has resulted in much confusion among various writers. The *encomienda* was one type of *repartimiento* of which there were many. The new labor *repartimiento* broadened the group within which the services of forced labor were distributed, increased the importance of the *patrón* whether he was an *encomendero* or not, and thus more firmly and more extensively was agrarian patronage established.

In Chile, Peru, and in the territory now included in Bolivia clear accounts are available which show how the *repartimiento* of the services of the *tributarios* were utilized. *Cédulas*, pertaining to Chile (1622), reiterating the nonexistence of forced personal services, except for specific public benefits which included agriculture, excepting certain types, provided that each year one third of the Indians of the *repartimientos* must work on the *estancias* of the *vecinos* and *encomenderos* to whom they had been assigned, while the the remaining two thirds were permitted to rest or work on their own farms or for hire to whom they wished. This third of the *tributarios* worked in agricultural and livestock operations for two hundred and seven days or nine months of twenty-three days each, after which the Indian would be free for two years except he would be called upon to serve in the preparation of certain materials for the construction of the churches. If the village of the *repartimiento* was near the place where the *tributarios* were required to work it was sometimes arranged that the *mita* of sixty-nine days each year was submitted for the *mita* of two hundred and seven days every third year.²⁴

In Peru and the territory which is now Bolivia it was more difficult to give a

²³ Simpson, *The Encomienda in New Spain*; Zavala, *New Viewpoints of the Spanish Colonization of America*, pp. 89-90; Solórzano, *Tomo 2*, pp. 7, 12 (Editorial note by Ramiro de Valenzuela); Priestley, p. 325; McBride, *Chile*, pp. 119-120; Hubert Howe Bancroft, *History of Central America 1501-1530*

(San Francisco: A. L. Bancroft and Company, 1883), p. 264; Charles Edward Chapman, *Colonial Hispanic America* (New York: Macmillan and Company, 1933), p. 188.

²⁴ *Recopilación, op. cit.* Leyes 1, 19, 20, 21, 24, 25, 26, 27, 31, and 32. tit. 16, lib. 6.

general rule or calendar of labor assignment because of the wide differences in climate and types of farming. Matienzo, describing conditions in the latter half of the sixteenth century, stated that in the highlands a total of seventy days' work a year was required of the Indian for the payment of his tribute and taxes. Forty of these were for the *encomendero*, eight for hospitalization or medical care, four for the community upkeep, ten for the *Cacique* (Indian Chief), and the remaining eight for His Majesty to pay salaries of other officials. The *encomendero* was allowed entrance to and exit from the village of residence of the Indians of his *encomienda* only to collect his tribute or to select the forty days to be worked by the Indians on his *hacienda*. Where the *hacienda* was near the village of residence of the Indians, labor assignments were made each week, but if the work was at some distance the Indians were away from their villages sometimes for months or even a year. In the earlier accounts one-tenth of the Indians from a *repartimiento* seem to have been taken in each *mita*. Later this was increased to one-seventh. In the *coca* plantations, which were in a less healthful region and required many days for the round trip, the Indians were required to work only twenty-four days for the *encomendero*.²⁵

In New Spain and Guatemala it was the custom for the *juez repartidor* to make *repartimientos* of laborers to proprietors of agricultural properties by the week. The court designated in advance how many Indians might be taken out of each town. Legally this was one-fourth the total number of workers in the town. In general the numbers of laborers assigned to each *hacienda* were small, perhaps from

three to twenty. Larger numbers were given, however, to many. For these services the proprietors paid a daily wage which over many years was kept at one-and-one-half *reales* per day. The *juez repartidor* collected from the proprietor one-half *real* as a fee for his official service. In some cases, at least, pay was allowed for the days required for going and coming.²⁶

The *mita* was "totally abolished by decree of the courts, general and extraordinary expedited November 9, 1812, and it is in consequence of it that there is not a *mita de repartimiento*."²⁷

Praedial Serfdom

While the *encomienda* was going through its long and turbulent period of evolution and decay, another less-official and therefore less-written-about but even more important institution gradually gained a foothold within the Spanish American colonies. This was the institution of praedial serfdom in which the agricultural worker taking up his residence on the land of his *patron* became attached to the land and was sold with it. These Indians together with others who were added from time to time from wanderers or refugees from *encomiendas* and *repartimientos*, willingly or forced against their will, became a servile class of great importance in the colonial agrarian system.

In Chile in the time of Philip IV, Indians having this status were called *inquilinos*. The name has come down to the present day from ancient Rome where about the time of Trajan, 98-117 A.D., there had been a class of farmers, residing on the land with their families, selected from among the barbarians, who at an earlier period had been legally bound to the soil. These settlers were called *in-*

²⁵ Don Juan Matienzo, *Gobierno del Peru* (Buenos Aires: Compania Sud-Americana de Belleles de Banco Buenos Aires, 1910), pp. 40 and 92.

²⁶ Lesley Byrd Simpson, "Studies in the Administration of the Indians in New Spain VI The Repartimiento in Agri-

culture," *Ibero Americana*: 13 (Berkeley: University of California Press, 1938), Part III.

²⁷ *Recopilación de las leyes de las Indias* (Madrid: Ignacio Boix editor, impresor y librero, 1841), lib. 6, tit. 12, p. 279.

quilini. They may have been the fore-runners of the *coloni adscripti* who became legalized serfs at the hand of Constantine in 332 A.D., forming the colonate of the later Roman empire. The *inquilinos* of colonial Chile were required to work one hundred and sixty days each year for the *senor de la estancia* for which each worker received, whether he be father or son, lands sufficient for seeding an *almud* of maize, two of barley, two of wheat, and space also for vegetables. Also he was permitted by the *senor* the use of work animals and metal points for his plow. He could enjoy these lands with shelter during his obligation to serve but the laws specifically provided that he might not acquire title of proprietorship in them, nor was he permitted to convey title to them to another. In addition to these prerequisites he was allowed a *real* each day in wages.²⁸

In New Spain and Guatemala these rustics were called *gananes*, or *nabortas*. They had been attached to their precarious estates by laws of vagabondage in the sixteenth century and by debt peonage in the eighteenth century and from then until modern times.²⁹

In Peru and Bolivia they were *yanaconas*. Matienzo tells us that he who had *chácaras* with *yanaconas* was accustomed to sell them jointly with the *chácaras* and thus obtain more for the land which he thought was "not inconvenient, and notwithstanding the new overseer may not desire to keep them he should not be allowed to require them to quit the lands which they had cultivated for him." Referring to the *senores* in Spain who held *vasallos solariegos* who could go when they wished, leaving the lands of the *senor*, he stated that these Peruvian and Bolivian Indians were not permitted to go except

when it was "expedient." Accordingly, Matienzo framed laws for the continuance of this form of vassalage. No Indian was to be allowed to leave his *repartimiento* without the consent of the *audiencia* "which would not be given without great cause." The *yanacona* was to be paid customary wages. Those who went dirty were to be punished. They could not be deprived of the lands given them nor could they be removed from the *chácara* without their consent unless they had committed some crime. A penalty was levied against anyone who would lure the *yanacona* away from his *repartimiento*.³⁰

This new species of slavery becoming known to His Majesty, he demanded that they be liberated and be allowed to work for wages where they pleased. When the Viceroy Luis de Velasco transmitted the demand of the Crown to the places where there was the greatest number of *yanaconas* the *Audiencia de charcas* suspended its execution, enumerating the inconveniences which would result, denying that they were held as slaves, declaring that they lived content with their women and children and were well treated. Thus, under the excuse of public convenience, the institution of *yanaconaje* remained in its former status. By this institution of forced labor and forced residence the *yanaconas* were alienated from their *pueblos* and remained on the *haciendas* of their *patrones* attached to the soil as were the ancient *coloni adscripti*.³¹

Just as forced labor obtained by *encomienda* and other forms of *repartimiento* became illegal before the end of the colonial period, praedial serfdom was declared unlawful by many proclamations

²⁸ *Recopilación*, op. cit. Leyes 46, 47, 48, and 49; lib. 6, tit. 16.

²⁹ Simpson, *The Repartimiento System*, pp. 93-94.

³⁰ Matienzo, op. cit. pp. 21, 22.

³¹ Gaspar de Escalona Agüero, *Gazofilacio Real del Perú* (Published first in Madrid in 1647, fourth edition published in La Paz, Bolivia: Publicación del Ministerio de Educación Bellas Artes y Asuntos Indígenas Editorial del Estado, 1941), pp. 235-238.

both before and after the provinces secured their independence.

Land Grants

The general law of 1513 referred to above, providing for partitions of lands and services, conceded authority to the grantee after a period of four years to make the land concession a "thing of his own" and to sell it according to his wish to whomsoever he was able. Distinction was made in the amount of land to be given according to whether the applicant was of "higher birth" or of lower grade and desert, and heed was given to the quality of the applicant's labors in cultivation and in animal husbandry. Later legislation was more specific with respect to the conditions under which title would be granted. Occupation of the grant must be made within three months after it was assigned. A second grant to the same individual was illegal until after four years of compliance. Those who accepted the contracts with the authorities for grants of land were obliged to have improved their building lots, peopled the houses, made and assigned the fields for cultivation, and to have cultivated them, made the plantings and placed animals in the pastures within a limited time specified in the terms of their grants. Failure to carry out these provisions carried as a penalty the loss of the land and in addition a cash fine.³²

Petitions for lands or building lots were presented to the royal *audiencia*. Officials were appointed to notify the viceroy or president the opinion of the *audiencia*. If the petition was for lands and waters for a sugar mill, application was made directly to the viceroy by whom it was referred to the *audiencia*. The opinion of the *audiencia* having been submitted by the designated official to the viceroy, the

latter made the decision upon the basis of which the grant was authorized or rejected. Many grants, however, were made illegally by the *Cabildos* (councils) of towns without the required reference to the authority of the viceroy.³³

If these original decrees had been enforced the early colonial land policy could not have been subjected to severe criticism. The laws themselves anticipated the homestead act of the United States by three centuries. Their execution, however, fell far short of the imperfect execution of the land laws of the northern republic, while subsequent legislation opened the doors more widely to land grants, usurpation of Crown and Indian lands and confirmation of titles on a grand scale.

Other Land Grants for Colonization. From 1568 to 1586 a law designed to promote colonization went through various stages of legislation which permitted grants for that purpose, omitting the detailed specifications with respect to race and qualifications of the settlers and improvements to be carried out within certain periods of time.³⁴ This form of legislation has long been the means in South America, even in modern times, of first obtaining possession and, on the basis of that possession, title to vast areas of land under pretense and color of land colonization. So generous were the grants and so lax the enforcement of the conditions under which they were made that early in the colonial period most of the accessible good lands had been brought under individual ownership, or possession in fact, except those included within *ejidos*, *dehesas*, municipal reservations, and Indian communities. The *ejido* was a municipal farm operated to pay the salaries of public officials. The *dehesa* was a common pasture for the animals of the citizens.

³² *Recopilación*. Leyes 2, 3, and 11, tit. 12, lib. 4.

³³ *Recopilación*. Ley 8, tit. 12, lib. 4. (1563)

³⁴ *Recopilación*. Ley 4, tit. 12, lib. 4.

Land Grants for Cities, Towns, and Villages. The intimate relation, reflected in present-day practices, between town and country in the Spanish system of colonization is illustrated by laws, issued as early as 1523 by Charles V and amplified later by Philip II, providing for the founding of settlements of varying size, each one, even the city which was most metropolitan in character, being a rural-urban unit. The rural-urban character was necessary for the subsistence of each new settlement which must be self-sustaining. Accordingly, supplementary land grants were made for city and country uses. Elaborate rules were given in the laws for the planning of such settlements. Lands were set aside and instructions given for the location and arrangement of *plazas*, streets, public buildings, building lots for the settlers, and an adequate *ejido* and *dehesa*, both of which remained the property of the municipal council. Allowance was made in all the above allocations for expansion of the population and for their corresponding future subsistence. These requirements being filled, the remainder of the lands were divided among those having authority for founding the settlement and the ordinary citizens, each of the latter receiving a city lot and lands for cultivation, making reservation for future immigration.²⁵ If there should be irrigated lands, these were to be apportioned among the first settlers.

Size of Holdings. Various attempts were made to limit the size of holdings granted to individuals. The ordinary settler was required, for admission to a *villa de españoles*, to have at least ten cows, (four bulls or two bulls and two steers), one mare, one brood sow, twenty ewes, six hens, and one rooster. In some settlements he pastured his livestock in the *dehesa*. In others he was granted pasture

lands of his own. In any case his holdings must not exceed five *peontas* or three *caballerías* according to personal distinctions made in the partitions. Originally in Spain this distinction had been made between the foot soldier and the cavalryman. In colonial America judgments as to birthright and desert became an opportunity for personal favoritism and the *caballería* and the *peontía*, instead of being names of earned titles, came to be used as units of area. The *caballería* included a building lot 100 feet by 200 feet, 500 *fanegas* for wheat, 50 for maize, 10 *huebras* for vegetables, 40 for trees, and pasture for 50 brood sows, 100 cows, 20 mares, 500 ewes, and 100 goats. The number of acres in a *fanega* as given by the different authorities for different localities varies from about a third of an acre to more than an acre and a half. The *huebra* was the amount of land plowed in a day by an ox team. A *peontía*, compared with the *caballería*, contained one-fourth as much land for buildings and one-fifth as much for crops and pasture. The person who assumed the responsibility of founding such a settlement, if successful and if he had complied with the terms of his assignment, was granted four square leagues or nearly 25,000 acres of land, or more, according to the quality of the land. Thus, although the majority of the grants were to be small, the door had been opened to the formation of huge estates under individual ownership.²⁶

Indian Lands. Always, and with much repetition, the rights of the Indians were provided for in the laws. But these very attempts to protect the Indians resulted in much injustice because of the necessity of leaving to local authorities the judgment required in determining the extent of the Indian's rights.

In the laws of Burgos of 1512, men-

²⁵ *Recopilación*. Particularly leyes 1, 3, 7, 14, tit. 7, lib. 4.

²⁶ *Recopilación*. Leyes 6 and 9, tit. 5, lib. 4; and ley 1, tit. 12, lib. 4 quoted above.

tioned above, which provided for the congregation of the Indians in Española and San Juan and in those based on the earlier laws which were published later in the *Recopilación* for general application in the Indies, provisions were made for fields of mandioca, chile, cotton, garlic, etc., apparently for communal cultivation by the Indians, and for plantings of maize and for poultry flocks and a house with its building plot for individual cultivation, use, and occupation respectively and which were to be their own inalienable property which they could not leave.³⁷

In discussing the territorial aspects of the *encomienda* above, the usurpation of Indian lands by the Spaniards has been mentioned as a prevailing evil in the colonial period. A clearer concept may now be had of how some of these usurpations may have taken place. In none of the laws are the titles to the Indian lands clearly defined. The Indians did not know what a land title was. The right to use and occupy the land was all that he had ever had as a title. Disease and cruel treatment of the Indians had reduced their numbers. In the absence of direct heirs, the land of the Indians being held under title of precarious possessions (*nudos usufructuarios*), reverted to the Crown and thus became available for partition to Spaniards.

Composición de Tierras

Between 1589 and 1591 the situation had reached a critical status. Philip II was impressed by the liberty with which so many persons had entered Crown

lands, and the great disorder which had prevailed in their distribution and partition. Pressed by an extreme emergency resulting from the depletion of the Royal Treasury and mounting debt through years of war with England, France, and Holland, the destruction in 1588 of the great Armada, internal strife in Spain, and now open attacks by English ships on the coast of the West Indies and South America, he took steps to (1) confirm existing land titles of Spaniards and Indians, (2) to create new titles by *prescripción* to lands which had been improved and occupied for a period of forty years, and (3) to recover, for the disposition of the Crown, lands occupied by usurpation, title to which could not legally be obtained by *prescripción*. Thus was initiated the policy of *composición de tierras* which was not only to characterize and dominate the Spanish colonial land policy, but was to provide the physical setting for the agrarian system for centuries to come.³⁸

Procedures in Composition of Lands. The original instructions required that the officers were to reserve "before all things" that amount of land which they believed necessary for *plazas*, defense, *ejidos*, *dehesas*, and *baldíos* (unappropriated public lands) of the towns and populated places, not only with respect to the then existing status but to the probable future increase which each one might be expected to have and for new locations which were feasible for settlement. One hundred and sixty odd years later, referring to these same instructions, it was ruled "that there was no need of revision,"

³⁷ Simpson. "The Laws of Burgos," p. 8. Simpson, "The civil Congregation," p. 44. *Recopilación*. Tit. 3, lib. 4. Solórzano. Tomo I, pp. 371-382.

³⁸ *Recopilación*. Leyes 11, 14, 15, 17, 18, and 19, tit. 12, lib. 4. Ley 11 is earlier and not specifically a part of the series of legislation initiating the policy of *composición*, but is incorporated as part of the system in the royal cédula next cited. Gaspar de Escalona Agüero, *Gazofilacio Real del Peru*, Cuarta Ed. (La Paz, Bolivia: Biblioteca Boliviana II a

Serie—No. I, Publicación del Ministerio de Educación, Editorial, del Estado, 1941), pp. 242-256. Manuel Fabila, *Cinco Siglos de Legislación Agraria en Mexico*, Real Cédula, 15 de Octubre de 1754 (Mexico: Banco Nacional de Crédito Agrícola S. A., 1941), pp. 34-38. George McCutcheon McBride, *op. cit.* pp. 104-111. (Contains important citations not included here). *The Land Systems of Mexico* (New York: American Geographical Society, Research Series No. 12, 1923), pp. 56-57.

that the *pueblos* should be left in possession of their lands—rulings made in respect to those which had been usurped, and concessions of great extent made to them according to the exigencies of the population.

Second in order in the original instructions from the King, the native inhabitants were to receive consideration with respect to their needs of land for making their cultivations and seedings and for their livestock enterprises. Each Indian was to have his right confirmed in that which he then held and a sufficient amount in addition to provide that which was lacking for the full support of his family. Accordingly, Viceroy Suárez de Mendoza (1594) demanded that the *comisarios* and *Jueces de tierras* obtain all the facts concerning the rights of possession held in the land by the Indian, how he had obtained them, whether by partition, by purchase, or by inheritance and from whom, and in what manner and extent he held them, and if he was the legitimate owner of the same, and had not usurped them, and whether the lands were sufficient for the support of the Indian's family. Such evidence having been compiled in a report, the rights of the Indian were to be confirmed on the basis of that possessed at the time of the inspection or *visita*, and that determined upon as an additional requirement for his reasonable present and future needs. These procedures, too, were confirmed by the later instructions which demanded that those who should have the responsibility of these matters should proceed with gentleness, temperance, and moderation by verbal rather than judicial procedures in regard to those lands possessed by the Indians, and others which they may require for their cultivation and livestock production.

Having provided lands for the councils of the local settlements and for the

Indians, the claims of individual Spaniards were then to be considered. Should there be those possessing some "*tierras, estancias, and caballertas*" to whom it was possible to confirm title on legal grounds, or those who claimed new lands for their necessary use, or if there were those who had entered upon and occupied land which had not been included within their grants and for which they did not hold legitimate title, it was ordered that, in response to claims by each of such types of persons or situations, legal title should be confirmed or granted, giving due consideration to the quantity and quality of the land and the necessity and welfare of him who had enjoyed it. In the more detailed instructions drawn up by Viceroy Suárez de Mendoza (1594) consideration was to be given also to the ability of the one receiving the lands to work them, the one of greater capacity being given more land. Titles previously given by viceroys, governors, *audiencias* and *cabildos* (town councils) were to be confirmed. Officers of town councils were subject to the same rules and to the laws governing prescription and must abide by them as any other Spaniard.

The fee to be paid by the Spaniard for the *composición* of his lands and confirmation of title was vaguely indicated in the earlier instructions. The word *composición* in itself, among other definitions, means compromise or adjustment. It was sometimes, in fact most frequently, used to indicate the whole procedure or institution of determination of boundaries and adjustment of land titles and recovery of Crown lands. At other times the word was used to indicate the fee paid by the Spaniard for the confirmation of his precarious possession which either involved a moderate sum where actual titles or proof of concession or of *prescripción* could be presented or an actual purchase price for lands which had been oc-

cupied without such legal title. In the earlier instructions the King asked only to be served with that which appeared to be just while, in the law of 1631 and the instructions which accompanied it, provision was made for the establishment of prices by public auction, on the basis of which new titles were issued and confirmed.

In the law of 1754 proof by titles, instruments or whatever other legal means of possession prior to the year 1700, notwithstanding they had not been confirmed by the King, viceroys or *audiencias*, was sufficient grounds for confirmation of title. If they had not improved and cultivated their lands they were given three months in which to enter upon them and to do so, thus incorporating in the law of *composición* a ruling made early in the sixteenth century re-establishing beneficial use and improvement as one of the basic requirements for confirmation of title. The price of confirmation, if occupied subsequent to the year 1700, was determined and paid before the proper officials of the *audiencia* plus a service fee of a half *anata*, following which the titles were granted in the name of His Royal Majesty. All lands not having been thus confirmed were subject to *composición* by new applicants.

Methods of Administration. In 1591 Philip II issued instructions for the execution and administration of the laws of *composición* which were to be used generally throughout the Indies. In accordance thereto land commissioners and judges were appointed by the viceroys for this purpose. Mendoza, Viceroy of Peru (1590-1596), and his successors continued to appoint these officers for many years.

After some years, however, it appeared to His Majesty that the institution was

contributing more to the welfare and profit of the land commissioners and judges than it was to his royal treasury and curbs were placed upon its practice, the royal council of the Indies reviewing the facts of each case. Finally, during the term of office of the Viceroy Príncipe de Esquilache (1615-1622) the entire procedure was halted; but under the common law confirmation of title continued by prescription, although in Peru, at least, only on petition of the government accompanied by a report to the King. During the term of office as Viceroy of Peru of the Count of Chinchón (1629-1639) a new law for the *composición* was dispatched, and special orders sent to Peru for its execution (May 27, 1631). The new law was executed by colonial officers of His Majesty. And so the composition of lands proceeded, locally administered, for a century with only minor changes, until a ruling in 1735 inspired by rampant abuses of the privilege demanded that only the King could rule in the confirmation of titles. However, this system of remote control lasted only nineteen years, until 1754 when the sale and composition of lands were returned to colonial officials and duly appointed deputies operating under the viceroys and presidents of the *audiencias*. Thus the administration shifted back and forth from provincial to royal control and the reverse as the usurpations, personal favoritism, and fraud characteristic of local administration overbalanced the heavy costs, injustice to small holders, stagnation and chaotic condition of land titles when royal approval was required. By the decree of 1754 the problem was finally resolved in favor of colonial administration; and one hundred and sixty-five years of experience in the legislation and administration of the laws of composition were integrated, clarified, and confirmed.

Administration of Grazing Privileges

Decrees by Charles V demanded that pastures, forests, and waters of the Indies including those of the *tierras de senorio* should be common to all of the citizens. *Dehesas*, of the municipal councils, as in Spain, were made exceptions. Also cultivated fields from which the crops had been harvested were declared available to owners of livestock for common pasture. In these laws the old rules of the Spanish *Mesta*, which were made applicable to the American colonies, are readily discernable.³⁹ That the influence of the *Mesta* in America was short lived, however, is attested by Klein, whose studies indicate that the system failed in Española and New Spain where conditions were unlike those of Spain.

The Majorat or Mayorazgo in America

The colonial laws gave authority to found *mayorazgos*, but did not provide the rules for their foundation.⁴⁰

The *mayorazgos* of Hispanic America were almost word-for-word copies of titles created under this name in Castile. They were landed properties conveyed by inheritance under a system of primogeniture. Succession was dependent upon lineage, grade of relationship, sex, and age. Preferences in the succession were in the following order: legitimate sons and daughters, legitimized sons and daughters, ascendants, collaterals, non-relatives. The boy of the same line and grade was preferred to the girl. Among children of the same line, same grade of relationship, and same sex the eldest was preferred. Thus members of the line of the eldest legitimate son preceded all

others, even though this son should die before his father's death. Wives and ecclesiastics generally were excluded.

Abolishment of such entails in America occurred about the time of their annulment in Spain by the laws of 1820, 1836, 1841, and 1855. Thus, Argentina nullified them in 1813,⁴¹ Mexico in 1823,⁴² Bolivia in 1833,⁴³ while Chile, in the campaign to abolish them which began in 1826, ended in success during the administration of Montt (1856-1861).⁴⁴

The *mayorazgos* of America as in Spain were symbols of the landed aristocracy who held tenaciously to this remnant of feudalism. Though limited in numbers they were extensive in area. Owned by the most illustrious families they became patterns for the less illustrious and thus played an important role in the perpetuation of large estates and in establishing and continuing outmoded agrarian customs.

Significance of the Foregoing

The historical summary presented above will be well understood and appreciated by those who have come face to face with South American agrarian problems. To the uninitiated, however, the vital significance of the various phases, selected above for their importance in relation to present-day problems, might be missed. The emphasis given the Indian problem, for example, is because of the predominance of Indian blood today in the South American agricultural population and because principles of agrarian law and custom have their origin in the relations established between the Spaniard and the Indian. Many of the great estates of Central and South

³⁹ *Recopilación*. Leyes 1-20, tit. 5, lib. 5, and Leyes 5, 6, and 7, tit. 17, lib. 4. Julius Klein, *The Mesta* (Cambridge: Harvard University Press, 1920), p. 9 including footnote 2, and p. 276 including footnote 3.

⁴⁰ *Recopilación*. Tit. 23, lib. 2, and tit. 3, lib. 4.

⁴¹ Joaquín V. Gonzales, *Obras Completas* (Buenos Aires: Universidad Nacional de La Plata Edición ordenada por el Congreso de la Nación Argentina, 1935), Vol. III, p. 110.

⁴² McBride, *Land Systems of Mexico*, p. 67.

⁴³ Mario C. Araoz, *Nuevo Digesto de Legislación Boliviana* (La Paz, Bolivia Editoreal "Renacimiento" F. S. R. y Cia 1929), Tomo Primero, Ley de 31 de Octubre de 1833, p. 164.

⁴⁴ McBride, *Chile*, pp. 191, 197, 200, and Diego Barros Arana, *Historia Jeneral de Chile* (Santiago: Josefina M. de Palacios, Editora 1897), Tomo XV, p. 85.

America continue with agrarian organization quite similar to that of the colonies and of medieval Europe. Agricultural workers in many parts are still in fact praedial serfs. Though legally free, they are held to their tasks and to their land by their ignorance. Their oppressors know too well that once educated their labor force can and will leave them. If ignorance is not enough to hold them, vagabondage laws and even unlawful coercion still may be effective.

Aside from the purely personal aspects, however, the property rights of these rustics also are in many cases as precarious as in colonial times. If by law they cannot be removed from the lands on which they live and work they still have arrangements which divide too vaguely the respective rights in property between

them and their *patrones*.

Then there is the chaotic condition of the land titles and surveys. It pertains to all landowners, individual and public. This condition is traditional. It provides opportunity for fraud and usurpation today as it did in colonial times. It is an attitude which takes for granted that possession is nine points of the law.

The mind of the South American landowner is still distinctly urban. This attitude is also traditional. It is depriving South America of a rural life which, in turn, is basic to a stable government. The presentation of specific cases for a specific country, however, is necessary for the full appreciation of these general observations. Such a presentation will be attempted in the third and last article of this series.

Production Policies for a Permanent and Profitable Agriculture†

By NOBLE CLARK*

TWO weeks after the collapse of organized fighting by the German army, every member of the federal Congress was sent an historic statement signed by the War Food Administrator Marvin Jones. The significant paragraphs in that statement were as follows:

"The United States has produced 50% more food annually in this war than in World War I. With 10% fewer workers on farms, and with total national population up a third, our people have had about 10% more food per capita during this war than in the 1917-18 period.

"During the present conflict, twice as much food has gone annually to the Armed Services and for overseas shipment as was used for these non-civilian outlets each year of the last war."

The magnificent wartime production record of American agriculture can probably be best summarized by a statement which borders on the miraculous. It is literally true that American agricultural production made it possible for World War II to be fought by a civilian population, and by over ten million in the armed forces, who were better fed than in peacetime. Never before in history has any similar achievement occurred in wartime.

Another way of measuring the tremendous recent increases in food production is that the current output of our farms is enough to feed 50 million more people than was possible with the average annual production in 1935-39. This assumes the same level of consumption today as in the prewar years. Fifty

million people is over a third of the population of the United States. What actually has happened is that Americans, on the average, are eating 10% more than they did in 1935-39, and 20% of our production has been shipped abroad. I think nearly everyone will agree that the farmers of this nation made as large a contribution towards winning the war as did any civilian group.

Our satisfaction and pride in this record, however, are tempered by the realization that the very factors which made possible the glorious wartime production of crops and livestock were the selfsame factors which were largely responsible for the economic problem of our farmers during the 20-year period between the two world wars. We had during these peacetime years surplus labor on millions of our farms, a rapid expansion of mechanization, and the wide adoption of more efficient technical practices in agricultural production. As a result, we had excess agricultural production capacity which depressed prices for farm products as related to other prices, and which piled up burdensome surpluses that plagued both farmers and the government. Agriculture in the twenties and the thirties was clearly out of balance with the rest of the economy.

Before the first World War we had large increases in our agricultural production, but in those days our population was increasing at a much more rapid rate than it has since 1920. Birth rates have gone down steadily during recent dec-

† The material on which this article is based was originally presented in an address delivered at the Nathaniel J. Bowditch Memorial Agricultural Forum at Amherst, Massachusetts, on November 13, 1946.

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ades, and also we no longer have the large annual influx of immigrants from Europe. Increased production of farm products was not much of a problem so long as population was increasing at a similar rate. Today, however, agricultural production is increasing at the most rapid rate in our nation's history, but the rate of population increase actually has been declining. Likewise it is significant that our exports of farm products also declined after World War I.

This undesirable relationship ceased to be a serious problem with the outbreak of the second World War. But when we look ahead at 1950 and the years beyond we will do well to recognize we cannot expect the continuation of the stepped-up demands for foods and fibers that are always associated with wars and the relief needs in the immediate postwar period. The necessity for a balanced relationship between agriculture and the rest of the economy is just as true today as it was in the thirties when our government was spending many hundreds of millions annually on farm relief programs. Because farmers today have a demand at high prices for nearly everything they produce does not by any means prove that American agriculture is in a strong position to face the years ahead. I remind the reader that this paper is directed towards the economic prospects for American agriculture in the years ahead. The present period of abnormal and inflated prices for nearly everything farmers can produce is not likely to last very long.

Mr. J. C. Capt, Director of the Federal Bureau of the Census, has stated that the nation's farms are producing today 7 or 8 times as much as they did in 1870.¹ He has suggested that we may be no farther than half-way along the road to mechanization of our agriculture.

We are still in the midst of substituting engine-power for animal-power and human muscle. Revolutionary new machines like the cotton-picker and the forage harvester are almost certain to become widely used. They will reduce the labor requirements on millions of our farms and change radically the organization of these farms.

Further mechanization of our agriculture will stimulate the already strong movement towards increased size of individual farms. In 1880 the average was 134 acres. By 1920 the average had gradually increased to 148 acres. But with the development of efficient tractors and their accessory equipment, the influence of mechanization really became effective. Today the average farm has jumped to nearly 200 acres.

Mechanization increases the productivity per farm worker. The average farm is now producing crops and livestock at a rate two and one-half times as great as in 1870. In this connection it should be remembered that, although farms have increased in size, over 95% of them are still of the family type. On most of our farms the farmer and his family constitute the major labor force. In May 1945 there were only 2.2 million hired workers on the 6.1 million farms in the United States.

Wartime prices for farm products have stimulated the use of lime and fertilizers by farmers in areas where these soil supplements were little used previously. For example, fertilizer consumption increased over 350% in the North Central states during 1944-45 compared with the 1935-39 average. Very much more would have been purchased if it had been obtainable. In Wisconsin, fertilizer consumption increased from 32,000 tons in 1936 to 230,000 tons in 1946. This is a seven-fold increase in ten years. The

¹ Speech, "Trend Lines of Agriculture," at National Catholic Rural Life Conference, Green Bay, Wis., Oct. 14, 1946.

effectiveness of these materials in stepping up crop yields and increasing farm incomes is appreciated today as never before. Nothing less than a severe deflation which would bring back depression prices for farm products will prevent the still larger purchase and use of these soil supplements in the years ahead.

As an administrator of agricultural research, I have knowledge of some of the new scientific developments, now in the making, which will make possible much expanded production from the same acreage or number of farm animals. Already we have seen what the new knowledge in plant breeding has been able to do in the case of hybrid corn. On the average this new type of corn yields at least 20% more than open-pollinated corn. In 1946 this was equivalent to more than 400 million bushels added to the nation's annual production, and still more millions will be added when more farmers plant the improved hybrids now available. Planting hybrid seed corn during the war years, instead of open-pollinated corn, had the same result as adding 16 million crop acres to the nation's farming area. This is nearly five times as many crop acres as in all of the six New England states combined.

Similar spectacular new varieties of other crops are being released from the agricultural experiment stations throughout the nation. Plant breeders are giving farmers strains which are disease resistant, higher yielding, and of much improved quality.

Scientists in other fields also are making large contributions towards increased farm production. The new insecticides, like DDT and sabadilla, are furnishing protection from insect damage in a degree never before possible. Increased knowledge of animal nutrition enables farmers to provide better rations for their livestock and poultry. We are learning how

to reduce the losses caused by various animal diseases. Thus research and technology are supplying farmers with information, materials, and tools so that agriculture has become increasingly a science. The enormous development of engineering science and invention in our urban industries is being matched by similar achievements in the biological and other sciences as they affect agriculture.

Farmers have welcomed these new developments which enable them to increase farm production. History has demonstrated quite convincingly that it is a lot easier to get farmers to respond to requests for all-out production than to win their support for production restriction programs such as were attempted during the period between the two world wars. There seems to be an inner urge on the part of farmers to create from the soil all that their knowledge and their strength will permit. In this respect they stand in contrast with some other occupational groups in our present-day American society. Secretary of Agriculture Clinton P. Anderson puts it this way: "Production of plenty has always been the farmer's aim ever since primitive man first scratched the soil with a stick, let fall the seed, and exulted with the harvest moon. This is his aim today."

Summarizing, then, we can say that during recent decades farmers have been increasing crop and animal production more rapidly than the nation has increased in population. Factors have been, and are, at work which will result in further major increases. It is estimated by the U. S. Department of Agriculture that by 1950, if reasonably favorable economic conditions are maintained, it will be profitable for farmers to produce products for human use at a level at least 11% above that produced in 1944.

The challenge we face has been stated tersely in the 1946 *Report on Postwar*

Agricultural Policies of the Special Committee of the House of Representatives on Postwar Economic Policy and Planning, (often referred to as the Colmer Committee). I quote as follows:

"The over-all production of agriculture increased about 60% from 1910 to 1945, while the production per worker in agriculture increased almost 100%. During the same period the population of the United States has increased (only) 50%. Meanwhile the volume of agricultural exports has declined. "The net effect of these changes has been to increase supply more rapidly than demand. The growth in national income over the period has not meant a correspondingly increase in the demand for agricultural products because people prefer to buy more clothes, automobiles, household equipment, and other manufactured products rather than increase their food consumption very greatly. The over-all result has been a downward pressure on farm prices.

"The technological progress which increased production and led to the long-run downward pressure on the prices of agricultural products has also made it possible to offset the decline in prices of agricultural products through reducing the costs of production. The individual farm family can now handle more land, and the output per person can, therefore, increase considerably. In order to permit farm income to be maintained at lower prices, the family-sized farm, particularly in the South, needs to be enlarged; this means that fewer people will be needed in agriculture if the benefits of low-cost mechanized production are to be passed on to the consumers without depressing the farm-family income. This adjustment of farm population, and the size of the farms, to the conditions created by our technological revolution is the most fundamental long-run problem facing agriculture in the postwar period.

"There has been a decline of about 15% in the number of persons employed in agriculture over the last 35 years. This trend needs to be continued so that farm-family income can be maintained on a high level through increased production per family.

"It cannot be too strongly emphasized that price manipulation does not solve the basic causes of low income in agriculture; the solu-

tion lies in having other more attractive jobs available, and in assisting people to move into them."²

These conclusions of the Congressional Committee on Postwar Economic Policy and Planning may not please certain groups of our people who have the belief that government can make agriculture profitable by the passage of laws. According to their philosophy the way to meet the problems brought about by the enormous expansion in agricultural production is to launch a production control program which will reduce the acreage of so-called basic crops and restrict in a similar way the number of farm animals raised.

The experience of the 1930s does not offer much hope of success in this direction. In spite of annual federal subsidies of many hundreds of millions of dollars, the AAA program did not succeed in reducing in any significant amount the output of most of the crops given special emphasis in the program. Some farmers reduced their acreage, but they moved the key crops to the better fields on their farms, applied more fertilizer, and in various ways offset the smaller acreage by better cultural practices which had the effect of maintaining, or actually increasing, the volume produced. There also was a widespread shifting of acreage from the so-called basic crops to other crops. This meant increased output of the other crops, and resulted in transferring the surplus problems of cotton, wheat and corn farmers to dairy farmers and others not directly involved in the production control programs.

Even where effective in part as with cotton, the enhancement of price brought about by restriction of production made our cotton so expensive that buyers in other countries could not afford to purchase it. We simply priced ourselves out of a good share of our foreign market.

² 79th Congress, 2d Session, House Report No. 2728.

Still another ill effect of high cotton prices was the stimulus they gave to competing fibers like rayon which quickly took competitive advantage when cotton prices reached higher levels. Thus the production control and price support programs in cotton have inadvertently given a large slice of the domestic market to the manufacturers of synthetic fibers. The Cotton South has now come to realize that reducing the acreage of cotton in the United States will not by any means insure prosperity for our cotton farmers in the years ahead.

But how about other crops? Does it always work out just as it has with cotton?

Take tobacco, for another example, which is usually considered to be the most successful of the production control programs. There can be no doubt but that tobacco prices in recent years have been higher than they would have been without the federal program. But it should be remembered that most growers have not been free to expand their operations, and to profit fully from the larger price, for they were compelled instead to reduce their acreage or marketing from what they were formerly. Much more important, however, has been the provision which makes it impossible for other farmers to engage in tobacco-growing in certain areas unless they buy out a farmer who now has a tobacco allotment or marketing quota. Tobacco allotments and marketing quotas are currently selling for \$200 to \$1,000 an acre which means that, if a returning veteran wants to grow tobacco, he must first find a farm for sale which has a tobacco allotment or marketing quota. He then must pay \$1,000 to \$6,000 more for such a farm than for the same acreage and improvements across the road which are just as good in every respect except that there is no tobacco allotment or marketing quota. The increased purchase price, or added

rent in the case of tenants, largely nullifies for the new producer the advantage coming from the production control program.

It is clear that a young war veteran wanting to get started in farming with tobacco as a cash crop is not likely to have much loyalty to a tobacco program of this kind. Likewise an Alabama farmer who wants to raise tobacco now that there is a greatly increased demand for it is not likely to be happy if he is told that Alabama farmers cannot grow tobacco and that, if he wants to produce tobacco for the market, he must move to an adjoining state and buy a farm there whose present owner will demand that he be paid \$200 to \$1,000 an acre for his tobacco allotment or marketing quota. The tobacco program hardly offers a satisfactory type of answer to the problems which the farmers in New England and in Wisconsin will face in the years ahead. Reducing the output of particular crops or livestock may give temporary benefit to present farm operators, but such a program discourages the basic changes necessary to correct the causes of overproduction and low rural incomes. The maladjustment is simply continued and aggravated. Likewise, other crops or livestock are certain to be substituted so that total output is not likely to be changed materially. It will take the most rigid kind of restrictions, even the rationing of land, if total farm output is to be reduced.

Professor H. Belshaw, of Auckland University in New Zealand, has put it this way: "We cannot at one and the same time raise agricultural efficiency, increase or even maintain existing farm populations, and improve the economic position of the farmer."³ We have the choice. We can have a smaller and more prosperous agriculture with rising

³"Foundations of Rural Welfare," *International Labour Review*, March 1945.

levels of rural living, or we can continue to have a much larger farm population than is required. We can have agricultural production on an efficient basis, with mechanization and science making it possible for a lessening portion of the population to supply the labor to produce our needed crops and livestock. Or we can maintain on the land more people than are needed; but we will do this at the cost of denying millions of farm people of many of the benefits of science, invention and technology. Peasant or subsistence farmers cannot afford automobiles, dentists or advanced education for their children. Sooner or later the question will arise as to whether democracy can withstand indefinitely the presence in its midst of areas in which millions of disadvantaged rural people cannot obtain, where they are, a level of living comparable to that of average urban workers.

In a progressive nation which uses science and technology, the needed foods and fibers can be produced by a decreasing proportion of the total population. The history of ever industrialized nation, including our own, gives unmistakable proof of this.

Americans could not enjoy a high level of living as long as virtually the whole population was needed to produce food, as was true in the early years of our republic when nearly 90% of the people lived on the land. Every census since 1790 has shown a decrease in the percentage of our people living on farms. Today it is only about 18%. But the level of living of our people has been rising steadily. We can raise the level still further as a higher proportion are put to work providing non-agricultural goods and services, and leaving on commercial farms, primarily of the family type,

whatever numbers may be required (by using efficient methods) to produce abundant crops and livestock. This does not mean they all have to move to cities. Rural communities are in need of thousands of carpenters, masons, electricians and other skilled workers.

Today there are almost innumerable opportunities for good paying nonfarm jobs. It is much easier now for rural people with inadequate farm opportunities to secure profitable employment in industry or in other occupations than it was during the period of farm distress between the two world wars. This is the time to make the needed readjustment in the human as well as the other factors in our American agriculture.

Nearly one-half of the nation's farm population lives in the thirteen Southern states. They receive only about one-fourth of the national farm income. There are other extensive regions of low farm income in many of our states, where the soil is unproductive, the climate unfavorable, the farms too small, or for other reasons the production per worker is so low as to make farm family incomes pitifully inadequate.

James Maddox⁴ has estimated that in 1935-36 no less than 1,590,000 farm families had incomes—including commodities produced for home consumption—of less than \$500 available annually for family living. Another million had incomes between \$500 and \$750. Sherman Johnson⁵ in January, 1941, made his diagnosis in 14 short words, "The pressure of manpower on the land is the heart of the adjustment problem."

In 1942, the more productive half of the nation's farms received 82% of the total net cash income of agriculture. The other half received only 18%. No acreage control program, no price pegging

⁴"Suggestions for a National Program of Rural Rehabilitation and Relief," *Journal of Farm Economics*. 1939, p. 888.

⁵*The Agricultural Situation*, U. S. D. A., January 1941, p. 11.

scheme, no subsidy for soil conservation practices, is likely to prove even halfway successful in meeting the needs of the 50% of our farms which are such a small factor in our commercial production of foods and fibers. Something more, and something wholly different, is required.

But all farmers, prosperous and successful farmers as well as those less fortunate, have a very large stake in the welfare of the entire agricultural population. When millions of farm people are in distress the ill effects spread and injure agriculture throughout the nation. It is certainly true that agricultural prosperity and well-being sooner or later, and usually sooner, are either nationwide, or they do not last. Those who till the soil and tend the farm animals today have a community of interest and mutual needs very much larger than was true a generation ago. We will do well not to ignore this changed relationship.

By this time it will be apparent that in my judgment the basic factors underlying "the production policies for a permanent and profitable agriculture," have to do with the number and the status of the human beings who live on and operate our farms. Shifting our production from one crop to another, arbitrarily reducing the acreage of particular crops, or any other attempts to preserve the present pattern and program of agriculture, are not likely to be successful when measured in terms of the prosperity and well being of our 25 million farm population.

By contrast, we cannot go far wrong if our agricultural production plans use the factors of land, crops and animals as a means to an end, and not as ends in themselves. Our concern will be for farm people, and we will measure our success in terms of what our programs do to farm people. Most of all we should seek to organize our agriculture in such

manner as to provide farm boys and girls with economic, social and other opportunities, particularly as regards such matters as education and health, on a parity with those available to urban boys and girls. There should be substantial equality in opportunity for young Americans to make the most of their inherent capacity and willingness to work regardless of where they happen to be born or the occupation of their parents.

I will hope, too, that we can find ways of increasing the security of farm families that rent the land they operate. Insecurity of tenure discourages most tenants from taking much interest in soil conservation. It is a serious matter when the very basis of our agriculture, the soil itself, is being destroyed at such an alarming rate. Stopping soil erosion will require strengthening the relationship of millions of rural people to the land they operate, and providing stronger incentives to the conservation of the soil. Mere development of terraces and the soil conservation practices will not be enough.

Even with those who are able to attain the status of owner-operator, the achievement of ownership comes too often at the expense of long years of labor, unrelieved by rest or recreation, in order to earn the money to pay for the farm. With farms becoming larger, and with livestock and machinery requirements increasing still more, the amount of capital required to purchase and operate a productive farm has become very substantial. In the Corn Belt at the present time it will aggregate 20 to 50 thousand dollars, and even more. Surely it should be possible to find ways of obviating the necessity of each generation of farmers having to save from their family incomes this amount of money. After all, why should each generation have to pay for the farm anew?

In this connection I want to quote from a report published in the summer of 1946

by a committee of British farmers and government officials who made an investigation a year before of dairy farming in the United States. Here is what they told their British neighbors when they returned from their visit here:

"Throughout our tour we were impressed by the size of the farm business that is often handled by the family unit. There is no doubt that the hours of work are long and many of the people whom we saw showed considerable signs of fatigue and weariness. The family dairy farm is driving the family too hard. It is true that mechanical appliances are well utilised to do the heavy work, but they do not avoid the routine work of milking and looking after the cows and other stock. It appeared to us that many of the farms should carry more labour. There is no real attempt in the current shortage of labour to solve the seven-day-week problem; indeed there seems to be no limit to the working hours of the family. We have seen examples of a farmer handling up to 160 acres and more with up to twenty-five milking cows and with the help only of his wife. Morning milking begins early, about 5 a.m., and much of the milk is sent away by 7 a.m. It is unlikely that the farmer's family will continue for long to be satisfied to work these excessive hours for small earnings."

It is hard to understand why it should be necessary for part of our American farm people to work such long hours, week after week, and year after year, when millions of our rural people have inadequate opportunities for employment on the farms they now operate. Someway and somehow we need to find ways of securing our agricultural production in such manner as not to require unreasonable hours of work on the part of so many farmers and their families, when at the same time still more farm people are denied an American level of living because there is not a local opportunity for them to turn their labor into money.

All of this is further evidence of the very large variability of the nation's agri-

culture. The difficulties which are so serious to farmers in one region may hardly exist at all in areas a thousand miles away. Generalizations are usually dangerous when applied to the farming industry of the entire 48 states. Likewise it should be obvious that the prospect of any "single shot" panacea proving equally effective on the farms throughout the nation is simply impossible.

But when we try to work out constructive solutions for the problems associated with surplus rural population in some areas, while farmers in other areas are working too long hours because they feel that they have to, I hope we can do so on a basis of voluntary action. Surely we do not want a governmental agency trying to enforce regulations covering hours of labor which a farmer may put in on his own farm. Neither do we want anyone to tell individual rural people that they are not needed in agriculture, and must get out of the farming business. There should be ways by which society can help rural people without ordering them around. I have the belief that most farmers will welcome the aid of government if it comes in the form of larger opportunities for the farm family, and the chance to benefit on a basis of self help.

Experience with crop and livestock control programs was not such as to make most farmers want to see such a program expanded or continued. But neither do farmers want to see a return to the 1932 prices for the things they sell. Recollections are still very keen of the acute distress suffered by farmers at that time. They do not want those things to happen again, and they expect their government to do all that it can to prevent them from happening. What, then, should the government attempt?

By far the most important task for the government, in my judgment, is to take whatever steps may be necessary to insure

a high level of employment for the whole of our economy. When virtually all of our people are fully employed, and our output of goods and services is at a high level, there is bound to be a large demand for the products of our farms. Good times in the city create conditions which are favorable for good times in the country. It is possible to have prosperity in industry without a corresponding prosperity in agriculture, but certainly the reverse is not likely to happen. There must be large buying power in the hands of consumers generally if farmers are to have a strong demand and good prices for the products they sell.

To maintain full employment our government must be intelligent and courageous in its taxation policies, in its international relations, in its policies towards labor, in its suppression of unfair monopoly in any form it may take, and in all the other governmental activities which influence the development and health of our whole economy. What the government is able to accomplish in these matters will mean infinitely more in terms of agricultural welfare than any purely agricultural program that the Congress could adopt, whether it be directed towards control of crop or livestock production or any other phase of farming.

Providing good jobs for all who are willing and able to work will do more than just increase the demand of urban people for products of the farm. It will create alternative jobs for farm people who have inadequate opportunities in agriculture. It will change the status of these people from producers to purchasers of farm products. It will reduce the number of rural people competing for the use of the farms of the nation. This should help to keep land values at a reasonable level.

Rural people are not likely to be benefited very much from increased farm

production, or better prices for the crops and livestock they sell, if the price of land advances correspondingly. The present landowner may gain from higher land prices, but the families who buy the farms at the higher prices will find their margin available for family living will be little if any better than would have been true if the increase in farm production or prices had not occurred. The same holds true for renters who are confronted with higher rents when the prices of farm products advance. It is a paradox, but true, that if farmers are going to have cake they will have to eat it. If they are to raise their level of living, they must use increases in their farm income to improve the welfare of their families; and not plow it all back into the land in the form of higher land values.

In New England, and in most of the other industrialized sections of our nation, there has been a large expansion in the number of part-time farms and rural residents. This seems to me to be a healthy development that should be further encouraged. These people, however, should not be expected to supply any large part of the crops and livestock needed by the nation, nor should they depend in any significant extent for their own living upon the sale of products from their small farm holdings. Likewise, I think the reader will agree, we do not want part-time farming to be used as a reservoir to absorb excess urban labor in times of industrial unemployment. Such a development might well prove most unfortunate from the standpoint of the farming industry generally, and certainly it is not an effective way to meet the real needs of the urban unemployed.

In all sections of the nation we will continue to have small commercial farms which emphasize the security and independence found on a small farm in this uncertain world. In Wisconsin it is ex-

pected that at least 25% of the full-time farms in the better farming areas will contain less than 60 crop-acres, even though mechanization and technology have made it possible for a family to operate twice this acreage, or more.

We have the hope, however, that the operators of these small farms will adopt the crop and livestock management practices which will permit them to have a farm income that will give the family at least a comfortable living, and the children a good education. Operators of such farms may not have the chance to accumulate as large estates as those on larger holdings, but we certainly want their children to have the opportunity to make the most of their inherent capabilities and their willingness to work.

It is to be hoped, too, that farmers can again give major emphasis to the quality of the crops and livestock they sell. We have been living at a time when shortages of supply made buyers willing to overlook quality if only they could obtain the products they so urgently desired. Quality programs in American agriculture suffered from neglect during the war. We need to take steps to regain the lost ground. In the years ahead the markets are almost certain to be more discriminating than at present. We will do well to use more of our labor and facilities to improve quality rather than to put so nearly all of our emphasis on increased production.

Farmers also have much reason to consider carefully the proposals that have been made for the better nutrition of the American people. Selfishly, farmers stand to gain through increased food consumption by those who now cannot afford adequate diets. But farmers have an even larger stake in the programs to improve the nutrition of our people. The acceptance by the government of the principle that in the public interest all

people should have at least a modest minimum diet would carry enormous implications. It would enable millions of Americans to live in a new world in relation to their health, their vigor, and their ability to work and to achieve. It would give food production and distribution a status of public importance they have never had before. Science has demonstrated that the advancement of human welfare is dependent upon improved nutrition. The logical next step is to have government acknowledge this relationship.

From the early days of our republic, we have recognized the obligation of the government to provide schools and teachers to train our children. The wisdom of this policy is not in dispute; everyone recognizes the benefits of having an educated citizenry. However, is the boy or girl attending school with a half empty stomach, and with physical evidence of faulty nutrition, likely to get much out of the educational facilities which are provided? Isn't there just as much reason for society to see that boys and girls have at least the minimum food essential for health as to provide them with teachers and a school?

Finally, science and technology, plus the large natural resources of this nation, make it easily possible for Americans to have a constantly rising level of living. But we will not achieve these benefits by following a policy of restricting production.

Virtually all occupational groups have used, and are using their economic power to reduce production. Some unions are limiting the number who can enter particular skilled trades. Some are setting quotas for a day's output of work. Some are forcing employers to give jobs to men whose services are not needed. Worst of all, some are pushing labor's demand for increased income beyond the increases

in production per worker, even though the new and improved machines enable more work to be done in the same period of time.

Some corporations are using patents, cartels and other monopolistic controls of production to make consumers pay prices not justified by production costs. In the guise of freedom of opportunity, they are using their enormous economic power to serve their selfish interests at the expense of the public welfare.

Farmers were late comers in this field of production restriction. They have made the excuse that others were doing it and they would have to do the same in self-defense. They have made the government a partner in production and marketing control programs, the purpose of which is to reduce the supply of particular farm products on the American market.

Each group has sought better prices for their particular product as a means of raising the incomes of their members, but they have failed to recognize that when all groups follow their example of restricting production the total supply of goods and services is reduced, and the national level of living goes down. We live by production, not the lack of it.

When our government grants groups of people the privilege of collective action in a corporation, in a labor union, or in a farmers' cooperative, there is the implicit understanding that they will use these collective agencies in such manner as to promote the public welfare. To permit the beneficiaries of this privilege of group action to use their collective power to advance their selfish interests at the expense of the rest of the population is to invite the gradual but certain impairment of our entire economic order. I know of few needs in our nation today that are so urgent as the acceptance by leaders of labor, of agriculture, and of industry that

they are accountable, not just to their own group, but to all the people.

Our democratic form of government is in grave jeopardy if the brains and the energies of our leaders are used largely in continual bickering and conflict between powerful pressure groups seeking selfish group advantages at the expense of the general welfare. Letting each pressure group have its way will not add up to an effective national program for all. No workable balance of power between the warring groups is possible if they continue with their present objectives. But we can obtain full employment, large production, and a rising level of individual and national well-being if the various groups in our society work together to increase the total pie to be divided. The government belongs to all of us, and should be the guardian of the general interest. It can become so to the fullest extent only if the powerful pressure groups are prevented from enlisting the government as a partner in enforcing their selfish will on the others.

Pressure groups are here to stay. They have a proper function in advising a democratic government of the needs of the members of their group. They have value as coordinators and as educators. But they become dangerous when they impose their will on the rest of the public. Those of us who desire the continuation of our American system of individual liberty and opportunity had better stop wrangling among ourselves as to how each of us can secure legislation that will enable our group to secure a larger portion of the national income. Instead we should work as hard and as fast as we can to develop effective methods of inter-group cooperation to insure that in the years ahead more will be produced, and thus enable us to have more available for division and distribution.

Organized Industrial Districts

With Special Reference to the Chicago Area

By ROBERT L. WRIGLEY, JR.*

MANUFACTURING and similar industries in most large cities are basic activities which employ many workers and use extensive areas of land. It is evident, then, that for these centers one of the most important phases of a comprehensive city plan is the planning of industrial land use.

The need for an industrial plan and the complicated problems involved in preparing it are readily appreciated after seeing the blighted residential areas and industrial districts of these cities and noting the unhappy mixing of various kinds of land use. With few exceptions the manufacturing plants, wholesale establishments, and storage yards located indiscriminately throughout residential neighborhoods are a blighting influence on residential property. Moreover, many of these industries also suffer by being poorly located. On the other hand many industrial districts with their old industrial structures, storage yards, vacant land and buildings, neglected railroad facilities and blighted residential and commercial property are unsightly run-down areas detrimental to neighboring land uses, uninviting to new industrial and commercial activities, and a depressing environment for the many people who work in the districts.

Through the years this unfavorable condition has been evolving. With comprehensive plans to guide them, cities might have developed in an orderly fashion and land would have been used more effectively, but without a plan haphazard growth was inevitable. Now, in order to make these cities more efficient

and liveable, their activities must be located in well-planned areas so that land can be put to its best social and economic use.

Considering the need for comprehensive planning of industrial land use it seems timely to examine the organization and operation of private real estate firms who have been unusually successful in developing planned industrial districts.

Planned Industrial Districts in General

Industrial districts, or parts of districts, whose development has been planned in some degree, are found in most large cities. The majority of these industrial areas can be called "planned districts" in a limited sense only; a few, however, have been planned in a thorough manner. Indeed, some industrial real estate firms plan and control the development of their property in such a comprehensive way that they may be called "organized districts."

Several types of planned industrial developments may be noted. Most large manufacturing plants—such as the National Cash Register Company in Dayton, Ohio, for example—are carefully laid out. These plants in themselves are planned industrial districts. Possibly the industrial land use in planned communities developed by large corporations at Longview, Washington; Kohler, Wisconsin; and Hershey, Pennsylvania; to name only a few examples, is planned still more carefully. A large loft building or a series of more or less contiguous buildings owned and operated by one organization and furnishing leased space to manufacturers, wholesalers, and ware-

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housemen are still other types of planned districts exemplified by the Starrett-Lehigh Building and the Bush Terminal in New York City. Produce markets, such as the South Water Market in Chicago, Union Stock Yards, and similar facilities, also are planned industrial developments large enough in many instances to constitute a district. Another type of expansion, planned in part, and common to most large cities, is the subdivision improved with paved streets, sewage and water mains and lighting facilities, and then sold piece by piece to manufacturers and others for industrial development. Certainly this kind of planning is better than none at all but it must be admitted that a more comprehensive method is necessary in order to develop efficient and attractive industrial districts where both small and medium-sized establishments can build factories and rent space.

Comprehensively planned, or organized industrial districts, where industrial firms of various sizes can either erect, purchase, or lease buildings, have been promoted by a number of private organizations in Great Britain and the United States but few examples of private development are found in other countries. In the Soviet Union we know all industrial districts are planned by the state. In Great Britain, too, a number of planned developments have been promoted by the government. In most instances the privately-owned and highly-integrated industrial districts in Great Britain and the United States are organized legally as corporations or common law trusts and are strongly fortified with large financial resources. They carefully direct virtually all phases of development and in some cases provide the industries with special services and facilities rarely furnished by developers of industrial real estate. In this manner the district is planned as a unit or "community

of industries" by an organization that is working with industrial establishments rather than with families as in the case of so many real estate developments.

Briefly, in comprehensive industrial planning as characterized by organized districts, the property not only is provided with streets and public utilities, but architects, engineers, and contractors, hired by the district management, carefully supervise the design, construction, and maintenance of buildings. These structures may be bought or leased by the tenants as circumstances warrant. Industries complying with district building regulations also may erect their own plants. To those firms requiring financial help to acquire land and buildings the developers advance funds at favorable terms. If the industrial tract includes many concerns, then public warehouses and other facilities and communal services, such as fire and police protection, may be provided. Moreover, the larger districts, in several instances, have a headquarters building with club rooms, a dining room, and other facilities where plant and district officials hold business and social meetings. To furnish all these amenities in small tracts, however, is uneconomical. Finally, extensive promotional work aimed at selling the district and its services is another feature of this controlled plan of improvement. From this brief description it is apparent that while in most cases "the interest of an industrial real estate operator and his client invariably ends with the sale of land . . . in [an organized] industrial District, the sale or lease of property often represents merely the first step in the relationship between the District and the client."¹ At all times, though, the dis-

¹Michael J. Jucius, *Industrial Districts of the Chicago Region and Their Influence on Plant Location*, (M.A. dissertation, School of Business, the University of Chicago, Chicago, Illinois, 1932) p. 50. This is an interesting and comprehensive report.

strict management carefully avoids any interference in the activities of each establishment regardless of whether the industry leases or owns its property. Of course, when all the land and buildings have been sold the developers have completed their job and the new industrial community is on its own. At this time streets and alleys may be dedicated to the city or the industries may assume responsibility for maintaining them. Complete sale of all property by the district organization, however, has occurred in only a few small tracts.

In Great Britain the Trafford Park and the Slough trading estates are of special interest. The Trafford Park Estate in Manchester is probably the oldest and largest organized industrial district in the world. Since its establishment in 1896 this estate has expanded to 1,200 acres wherein are located some 200 industrial firms employing almost 50,000 persons.² Slough Trading Estate, a 700-acre tract twenty-five miles from London, has about 250 industries and some 25,000 workers. In contrast to the large districts in the United States where no investment has been made in residential property, housing estates of considerable size where plant employees may either purchase or rent units have been built in conjunction with both the Trafford Park and Slough estates. Planning in still a broader sense is illustrated by the noted English communities of Letchworth and Welwyn where trading estates have been developed in association with housing and social institutions on garden-city lines. Of the other trading estates in Britain some have been promoted by private and some by public interests.

In the United States there are only a few organized industrial districts of any

note. The Kansas City area has two important districts incorporating many of the features mentioned above—the Fairfax Industrial District, developed and controlled by the Union Pacific Railroad Company, and the North Kansas City Industrial District. In Minneapolis the Northwest Terminal Company has developed an outstanding industrial subdivision. In Los Angeles a large industrial tract, promoted by the Central Manufacturing District of Chicago, now is controlled by the Atchison, Topeka, and Santa Fe Railroad Company. In the Chicago area, however, the scientific planning of industrial land use in the United States has reached its greatest development. Here an industrial real estate firm, the J. H. Van Vliissingen Company, has promoted the Kenwood Manufacturing District and other developments on land owned by the Phipps Industrial Land Trust. But the pioneers and foremost promoters of organized industrial areas in the Chicago region and in the United States are the Central Manufacturing District and the Clearing Industrial District. The remainder of this paper will describe briefly the development and operation of these districts.

Location and Early Development of the Central and Clearing Districts

Both the Central Manufacturing District and the Clearing Industrial District have promoted several industrial tracts in the Chicago area.³ All Central District projects are located in the southern half of Chicago with the two original developments near the city's geographic center. The Clearing District on the other hand has subdivisions within as well as outside of Chicago (Fig. I and Table 1).

² Mr. J. L. Hemery, Assistant to the General Manager of the Central Manufacturing District, and Mr. H. P. Phelps, Vice President, and Mr. D. P. Wells, General Manager of Clearing Industrial District, Inc., courteously furnished much of the material used in this report.

³ "Political and Economic Planning," *Report on the Location of Industry in Great Britain*, (PEP, 16 Queen Anne's Gate London, S.W.1., 1939) pp. 90-120.

Although development did not begin until 1905 the Central Manufacturing District actually was organized in 1890 by the Chicago Junction Railways and Union Stock Yards Company. It was formed as an operating unit to develop the many parcels of land which the parent corporation was consolidating in the area directly north of the Union Stock Yards. Due to its uneven surface and to other factors this area had been largely skirted by the growth of the city. Most of it, therefore, was either vacant or used for nonstructural purposes, especially lumber yards, and the lumber trade was an uncertain and declining source of revenue. Officials of the Chicago Junction Railways and Union Stock Yards Company,⁴ sensing the possibility of this land for industrial purposes, set out to acquire and promote it as an industrial real estate enterprise. Such a development would furnish the railroad additional freight. As matters stood, the companies' excellent facilities and services, developed to move livestock and perishable packing-house products with

great dispatch between the Union Stock Yards area and trunk line carriers, were not fully utilized. In other words, the efficient and rapid service accorded perishable products "could be extended to serve equally efficiently a territory of much greater extent. It was only necessary to find and create this new realm of usefulness."⁵

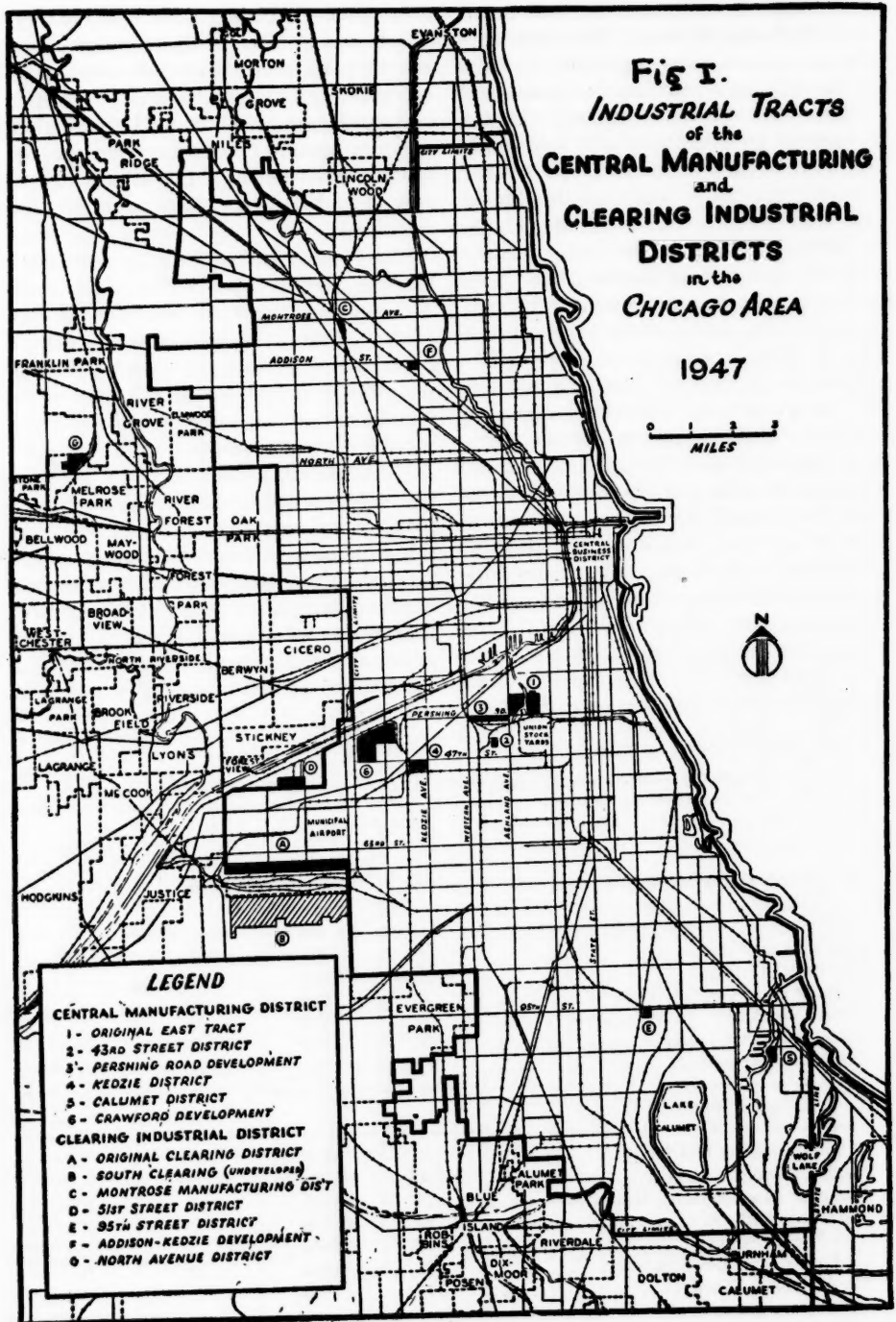
The utilization of excellent railroad facilities, among other factors, also played an important part in establishing the Clearing Industrial District. The Original Clearing District, the South Clearing property, and additional land totaling in all about four thousand acres, was consolidated in the early 1890's by Mr. A. B. Stickney, president of the Chicago Great Western Railroad. This executive planned to construct and operate outside the city a large clearing yard to facilitate the interchange of freight cars between railroads entering Chicago and thus to help solve a critical transportation problem created by the rapid growth of the country and its railroad net. Due to

⁴ Now called the Chicago Stock Yards Company.

⁵ Richard Hackett, "Speaking of Ourselves," *Central Manufacturing District Magazine*, January 1941, p. 22.

TABLE I.—INDUSTRIAL TRACTS OF THE CENTRAL AND CLEARING DISTRICTS

Central Manufacturing District	Area (acres)	First Available for Develop't (year)	Approximate Number of Firms	Percentage of Tract Developed
Original East Tract.....	260	1905	265	95
43rd Street District.....	22	1906	4	85
Pershing Road Development.....	90	1916	20	85
Kedzie District.....	60	1919	35	95
Calumet District.....	39	1925	1	35
Crawford Development.....	380	1932	11	15
Clearing Industrial District				
Original Clearing District.....	530	1899	105	85
South Clearing.....	1,300	1899	0	0
Montrose Manufacturing District.....	18	1939	8	100
51st Street District.....	87	1940	7	35
95th Street District.....	12	1943	3	33
Addison-Kedzie Development.....	25	1944	10	100
North Avenue District.....	118	1946	2	5



financial depression and other factors, however, the plan was suspended in 1893 and was not revived until 1898 when the Clearing Industrial District was organized as a railroad project to complete the classification yard, though not along the same lines laid down by Stickney. Unfortunately, for a number of years there was little activity because the railroads could not be induced to use the yard facilities on a cooperative basis. Finally the Clearing officials decided to develop at least a part of the land for manufacturing purposes. In 1907 the northwest portion was sold to the Corn Products Refining Company which during the next three years built and began operating an immense plant. Beginning in 1909 a five-hundred-and-thirty-acre tract north of the railroad yards—the Original Clearing District—was energetically promoted as an organized industrial subdivision; but distance from a labor supply, the absence of utilities, and other factors hindered development. Fortunately though, in 1912 the Belt Railway of Chicago, an important connecting line, organized and jointly-owned by thirteen major railroads entering the city, purchased the Clearing District's railroad facilities and rapidly constructed enormous new classification yards. The Original Clearing District, by its proximity to these facilities, profited immensely. Like the Original East tract of the Central District it now enjoyed door-to-door connections with industries located along all the railroads entering Chicago.

Inasmuch as it was illegal for a corporation in Illinois to own real estate, except for use in its business, the Central District was organized legally as a common law trust. Three trustees control the organization and function as a board of directors but a general manager and other officers handle day-to-day oper-

ations. Among the commendable features of this type of organization, as compared with a corporation, are ease of transferring control and development of properties to other parties, relative ease in changing the purpose for which the trust was formed, lower fee and taxation charges, and fewer and less-detailed reports, thereby enabling operations to be conducted with greater privacy.

Originally two organizations were formed to handle the Clearing property. The Chicago Transfer and Clearing Company was set up as a holding company to promote and finance industrial development on land owned by the Clearing Industrial District, a common law trust. After the restrictive Illinois statute had been repealed in 1933 by the General Corporation Act, the Clearing Industrial District, after being incorporated, acquired the assets of the Chicago Transfer and Clearing Company. The new organization is managed in approximately the same fashion as other corporations.

Promotional Activities of the Central and Clearing Districts

Seeing that no function influences the success or failure of the organization more than that of selling, the principal job of the officers is to sell the District and its services. Because of this, and the further fact that they are large operators, the promotional work of the Central and Clearing districts is more extensive and thorough than that of the ordinary real estate dealer. In this job they have had valuable assistance from the Chicago Association of Commerce and Industry. In its never-ending efforts to bring new industries into the city the Association has advertised widely the advantages of a Chicago location. Naturally the Central and Clearing districts benefit from this publicity. On the other hand, the Associ-

ation's task of attracting industry is made easier by the presence of these organized developments.

Various methods are used to contact clients and explain the advantages of a District location but some lines of approach have proved more successful than others. Advertising in Chicago papers and in *Commerce*, a publication of the Chicago Association of Commerce and Industry, as well as other trade magazines, has been resorted to with some success. *The Central Manufacturing District Magazine*, which serves primarily as a house organ for the industries, has been published monthly since 1916. It includes descriptions of manufacturing plants, news of the activities and personalities in the District, appropriate scientific and educational articles and other items, in addition to considerable advertising describing the District and its operations. In 1945 the circulation of approximately ten thousand was distributed chiefly in the Middle Western and Eastern states. From time to time brochures and pamphlets, in many cases elaborately illustrated, are prepared and distributed widely. The direct-mail campaign is still another way in which contacts are made. Form letters and pamphlets are sent to selected lists of prospects secured from state Chamber of Commerce directories and other sources. Feeling that many eastern plants are either moving to, or establishing branches in, the Middle West, the Clearing District has sent letters to prospects in the New England region. The Central District in a single nation-wide campaign has mailed letters to almost ten thousand executives. Although this advertising is expensive, one new industry will, in most cases, more than pay for the cost.

By and large, though, personal contact is preferred over the methods listed above. Since each client represents an individual

problem, and since the average executive is not fully aware of the factors involved in plant location, it is apparent that a district representative—a specialist in the science of locating industries—can present a more convincing case for the District through personal discussion than the general statement used in mass advertising. Yet experience has proved that on the whole the best sources of prospective clients are provided by industries already located in the District, and by industrial real estate brokers. Many excellent contacts have been made when satisfied tenants pass favorable impressions of the District on to business acquaintances. Bringing together interested industrial executives and district officials is profitable to real estate brokers because if a sale or lease is consummated, the District, on a purchase contract, will pay the broker a percentage of the total cost of land and buildings, and on a rent contract, a percentage of the total rent paid by the industry over a period of years.

Since from a financial standpoint medium-sized and small establishments fit best into this scheme of development, the districts have solicited and as a rule have secured establishments of this size rather than large plants. In most instances small firms make full use of the District's services and facilities. On the other hand large corporations do not require this aid. In general they have their own facilities to make thorough studies of possible industrial locations and to handle other phases of development. Furthermore, a large plant covering an extensive tract should be located on cheaper land than the districts offer.

In their promotional work the Central and Clearing officers stress both the situational and site advantages of a District location. Naturally they play up the "Great Central Market" idea. They

describe in some detail that long and familiar list of factors favoring the growth of industry in the Chicago region. Fortunately for them this list is so formidable that Chicago's situational superiority over virtually all rivals is easy to prove. Certainly this enviable situation has been a major factor contributing to the success of the districts. Within this great manufacturing and commercial area, as their promotional work further outlines, their planned developments, for a variety of reasons, offer better sites to relocated and new industries than the isolated location or the haphazardly developed industrial districts. The value to an industry of an attractive and conveniently laid-out industrial neighborhood, of financial assistance, of building design, construction and maintenance services, of splendid transportation, and of other services and facilities, is presented in a convincing manner. Frequently noted also is the fact that this whole scheme of development is more akin to sound municipal and regional planning than the usual unguided method of plant location.

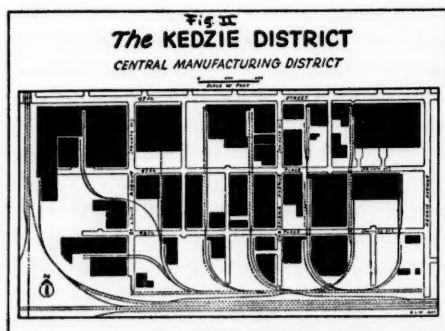
Services and Facilities of the Districts

Some phases of planning in the Central and Clearing districts are common to many real estate projects, but other phases are not. Platting streets and installing public utilities before selling an industrial subdivision, for example, is not an unusual practice, but few real estate promoters design, finance, and erect industrial buildings. These are distinctive services. While other planning services and facilities are important, the utilization of the latter features in particular has enabled the Central and Clearing districts to fashion attractive and efficient industrial developments. It must be noted, though, that the districts did not begin by providing all the services and

facilities furnished today, but added them as the demand grew.

Streets and Public Utilities. The method of subdividing land differs in the large and the small districts. Streets in the large tracts are owned by the District but in the small tracts they have been deeded to the city as soon as most of the factory sites are sold. More efficient subdividing of land, construction and repair of streets without first having to secure permission from city officials, and the routing of public traffic around the District, are the advantages of private over public ownership in the large developments. In these tracts the districts maintain the streets and then charge each establishment for the cost of repairs along its frontage to the middle of the roadway. If the time comes when all its buildings in the large developments are sold, the Central District may deed the streets to the city; or, the industries, through some type of cooperative arrangement, may continue to maintain them. In the smaller districts the entire area may be improved with the necessary streets, alleys, and public utilities before any buildings are erected. Breaking the districts into blocks at this stage of development is practicable because the land may be fully utilized within three to five years. Furthermore, the property likely will be built up with small to medium-sized plants. On the other hand it is common to develop large districts section by section. Their streets, sixty to eighty feet wide in most cases, are laid out on a gridiron pattern in contrast to some British trading estates where curvilinear streets have been adopted successfully (Fig. II). Since a decade or more may elapse before the large tract is fully occupied it is uneconomical to begin development by installing all the streets and public utilities. Moreover, it is not good practice to divide the entire tract into blocks at this time

either; it is best to hold one or more sizeable parcels in reserve for industries that might want considerable space. How long the land is held of course depends on the speed of development within the District as well as the demand for large parcels.



Water and sewage mains are installed by the District but power lines and gas mains are installed by the utility companies. The distribution of water and electricity are of special interest since they are not handled in the same fashion in all the districts. Although part of the water used in the Original Clearing tract comes from artesian wells located in the District, most of it used in this and the other Clearing and Central subdivisions, is purchased from the city of Chicago. In the small tracts all the industries purchase directly from the city but in the large tracts it is purchased by the District and sold to the individual industries at the same rate as charged by the city. In order to supply greater pressure during the summer months special equipment installed in the Original Clearing District repumps water to the industries at that time of year. So as to give buildings in this district added protection several group sprinkler systems have been installed. With these independent groups any damage to part of the system may be isolated to one unit with the other groups

unaffected. Central sprinkler service has been installed in the Pershing Road and Kedzie developments of the Central District. Thus the erection of unsightly tanks is avoided and industries secure better insurance rates.

All industries in the Clearing District purchase electricity directly from the large power companies serving the territory, but concerns in the Central District are served by the Produce Terminal Corporation whose generating plant is in the nearby Union Stock Yards which area it also serves. To supplement its capacity this corporation purchases the entire power output of a large plant operating in the Pershing Road Development. However, the primary purpose of the latter unit is to supply steam for heating the buildings in the Pershing Road tract. Of course, with this arrangement the expense of installing individual heating units in each building is unnecessary, the smoke nuisance is minimized, and cartage expenses for handling fuel are largely eliminated. The compact nature of this District, the enormous size of its structures, the rapidity of its development, and the similar demands of many of its industries made the installation of a central heating system practicable. In contrast, the other tracts were developed over a longer period of time and have smaller and more widely-spaced buildings. Under existing technical conditions these facts in particular—slow and scattered development and small one- and two-story buildings—militate against central heating units.

Unlike Clearing, the Central District has installed and maintains street lighting paid for by the District.

Financial Arrangements. Providing industries with financial assistance, a feature commonly emphasized in their promotional work, is one of the most distinctive characteristics of organized in-

dustrial developments as exemplified by the Central and Clearing districts. Certainly this assistance, which may be as high as eighty percent of the total investment, or more than many financial institutions will advance, especially in the case of small and comparatively unknown firms, has enabled the districts to attain more quickly their principal objective of selling and leasing their property. It has attracted to the district many firms, and especially new industries, since it enables an enterprise to start with a nominal investment yet with adequate facilities. It is true as a British report states:

"The success of many new enterprises depends on the speed with which it is possible to start production. Long delays in the early stages, after the necessary capital has been raised, deplete capital resources and irritate stockholders; meanwhile, there may be radical changes in the outside economic circumstances compared with those ruling when the enterprise was first started. Yet it is equally essential that a new enterprise should not rush into production without a full knowledge of estimated capital and operating costs, nor without a careful choice of site and a sound appraisal of labor requirements. If all the factors involved have to be investigated it necessarily takes time and costs money at a stage when both are particularly precious; [an organized industrial district] can enormously simplify and cheapen this initial investigation."⁶

In order to meet the various requirements of prospective clients, the Central and Clearing districts offer several plans for acquiring and leasing property..

(1) Land is sold outright and the purchaser improves it himself within a specified time limit governed by his expansion program. Applying a time limit reduces to a minimum the purchase of land for speculation. All improvements, of course, must conform with District standards.

(2) Land with improvements in or about to be installed by the District is sold outright. In this manner the client can submit his requirements and then accept or reject the proposals of the District. Moreover, the District supervises all details of design, engineering, and construction.

(3) Land with improvements in or to be put in by the District is sold on a deferred-payment plan. In most cases between twenty and thirty percent of the cost of land and buildings is paid in cash. The balance is amortized over a period of fifteen years or less with interest at six percent. Insurance, taxes, and other costs are paid by the enterprise. In most instances the districts will finance a greater percentage of the cost of a standardized structure than a specialized unit designed for one kind of industry, because the latter building, if it reverts to the District, cannot be converted to other uses easily.

(4) Land and improvements built to order by the District may be leased on a long-term contract. The enterprise pays an annual charge of six percent on the agreed valuation of land and nine percent for cost of improvements. Of the nine percent charge, three percent represents the cost of depreciation charges, and six percent the cost for use of improvements. Taxes, insurance, and other costs are paid by the tenant during the life of the lease.

(5) Space in buildings already erected can be leased for a short period at various terms.

With this broad financial policy, suitable contracts can be arranged for most industries desiring a District location. While the interest charges seem rather high one must remember that it is a "risk" rate since in many cases the districts are advancing from seventy-five to eighty percent of the total investment to

⁶ "Political and Economic Planning," *op. cit.*, p. 91.

small and little-known firms. On the other hand, the borrower, without penalty, can pay off his loan as rapidly as possible rather than in regular installments over a period of years as required by some financial institutions. However, before a loan is granted the prospective client is studied in some detail. As Mr. Richard Hackett, general manager of the Central Manufacturing District, states:

"After a thorough analysis of the needs of an industry, based on its present scheme of plant and production, its general record of development, its costs, markets, and future program of sales and distribution, if there is reasonable coincidence between such needs and what we have to offer well and good. If what we can provide cannot be made to tally with the indicated requirements we should be the first to remark the irreconcilable elements. Since in so many cases we are called upon to finance land and buildings . . . [with] our commitment . . . as great as eighty percent of the total, our stake in the success of an industry should be perfectly obvious. We could not afford to make the mistake of selling a concern a site in our tracts if it would not qualify because we should incur the hazard of the return of the facilities. Moreover, aside from the financial risk, the presence of an unhappy or unsound industry would present the wrong kind of testimonial for what we have to sell."⁷

Building Design, Construction, and Maintenance. Designing and constructing buildings and then maintaining them as pleasing and attractive units has been an important factor in attracting industry to the districts. This service appeals to prospective clients because it relieves them of the task of selecting an architect, of taking construction bids, and of making arrangements for railroad and utility services. The districts can afford to supply these services more economically than when profits are divided up by the several parties involved. Then, too, large-scale purchases of building materials and considerable standardization

of building types do lower construction costs. All these, including the financing, the selection of a site and other services, can be had by the industry with the signing of one contract or lease. This unified procedure enables the districts to give occupancy in sixty to ninety days after signing a contract. Such speed would be out of the question if it were necessary to negotiate with several parties.

The close supervision of development, including a careful selection of new establishments whose operations are not detrimental to neighboring industries, proper building maintenance, and a general interest in landscaping the front of buildings, insures an industry pleasing surroundings and protects the resale value of the property. All the developments, but some more than others, can claim aesthetic merit. Naturally they conform more with sound standards of city planning than the unguided industrial development. As the Clearing District states in one of its brochures:

"The landscaped vistas and well-tended beds of flowers are in keeping with the inspirational quality of the architecture. Here it has been proved for . . . years that the industrial building may be beautiful and artistic, with limestone and panelled glass design as impressively wrought as in public buildings."⁸

Surely workmen will "come here more willingly than to the dingy type of plant which industry has endured"⁹ for many decades. In such a neighborhood an industry can be proud of its address.

Architects, engineers, and other technicians employed full-time by each District, design all the buildings erected by the Central and Clearing organizations. That specialization has made these people experts in the science of plant design, and that good standards have been established

⁷ Clearing Industrial District, Inc., "One-Fourth of a Century of Progress," August, 1934, p. 2.

⁸ *Ibid.*, p. 2.

⁹ Hackett, *op. cit.*, p. 25.

to govern the use of brick, stone, and other building materials, are reflected in in many fine buildings. These technicians plan each structure as a unit to fit in with other buildings in a comprehensive scheme of development. A profusely-illustrated brochure, prepared by the Central District, called, *Architecture and Design*, gives in chronological order a "visual record of changes and developments in architectural design for industry during more than four decades." Due in part to high land values resulting from its central position in the city and in part to the type of construction commonly used at the time, the Original East Tract, by and large, was built up closely with many multi-story buildings and with virtually no provisions for landscaping. The still more massive and impressive Pershing Road Development is even more of a multiple-story project with those structures facing Pershing Road and McKinley Park built to a uniform height of six stories. Because in most instances they occupy cheaper land nearer the periphery of the city, and because more and more industries are using horizontal-line production methods, the majority of buildings erected in the Crawford and Kedzie developments and in the Clearing District properties (in line with modern industrial trends) are of one or two stories.

With the exception of some temporary frame structures, used for a number of years in the Pershing Road Development but now demolished, the districts have not provided limited space at very low rates for infant industries. Such "incubator" plants, of course, are a common feature of most British trading estates.

In building construction the Clearing and Central districts follow different policies. Previous to 1922 the Clearing District hired outside concerns to erect its buildings; but the failure that year of

several contractors to complete their jobs at a stipulated time convinced the Clearing management that it should have its own construction department. Today this department—made up of a well-equipped force of key construction men who are employed full time—handles all of the District's construction work, including the laying of switch tracks. Only part of a building project, roofing and plumbing for example, is sublet to other firms. On the other hand, buildings in the Central District are erected by responsible outside contractors who are selected in competitive bidding. All work, however, is closely supervised by the District's engineers and architects. Both districts retain electricians, painters, carpenters, and other building-trade technicians to maintain buildings and equipment. All structures, including those that have been sold, are kept in excellent condition by being inspected periodically and repaired if necessary. Industries are billed for this expense.

The location of new plants within a District is governed by a number of factors. In the oldest and almost fully developed project, such as in the original tracts, little land is available; hence a new industry desiring to locate there has virtually no choice of sites. For this reason, as well as because of the trend toward horizontal construction, the District officials have acquired additional land for development (Table I). In the small and only partly built-up tracts, too, the choice of sites is very narrow. On the other hand, in a large new tract such as the Crawford Development, many sites are available.

Expansion in a large District, it will be recalled, begins by improving only part of the land with streets and utilities. Where a new industry locates in this plotted section depends of course on the availability of vacant parcels and the

price the prospective client is willing to pay. Naturally, land lying along an important highway that skirts the District is more valuable than a lot located deep within the tract. Since it is the objective of the promoters to sell or lease as much of the land as possible, plants—although they may be widely spaced during the early stages of development—are located in a systematic fashion so that no unusable small or oddly shape parcels remain unsold after most of the District has been developed. Provisions for landscaping are made by establishing a building line fifteen feet back from the sidewalk in some cases, but more especially—at least in recent years—by platting wide streets and then establishing a narrow strip for landscaping between the sidewalk and the roadway. Plants also may acquire an option on additional land and hold it for expansion. Such lots are used for parking automobiles since the districts provide no such space. Of course streets and utilities will be extended into the unplatted portions of the District to serve a large plant that the already-laid-out portion cannot accommodate.

Railroad and Other Transportation. Excellent transportation, especially railroad service, available in this great Chicago terminal area, has been an important factor contributing to the successful promotion of the Central and Clearing districts. But unlike some of the other services it is not a distinctive feature. Indeed, railroad transportation in the Chicago area is so good that many other industrial plants in the territory enjoy service almost on a par with that available in the planned districts. Motor carrier service is excellent and is used by many firms but water transportation is of negligible importance. Air transport facilities, on the other hand, are improving rapidly.

Laying a railroad spur to the site of most new plants, even before the structure is erected, is common practice in organized industrial tracts. At first the spur is used to transport construction materials to the building site but later of course it can be used by the industry. Even though a new tenant does not require railroad service, the District, in order to facilitate the sale or lease of the property should the original lessee move, usually makes the necessary provisions at the time of construction so that a spur could be provided easily if the demand arose (Fig. II).

Switching and belt-line railroads in the case of some, and trunk-line carriers in the case of other tracts, serve the Central and Clearing Districts. The Central District's Original East Tract as well as its three other principal developments were built up chiefly to provide traffic for the short but very important switching line, the Chicago Junction Railway, while the growth of the Original Clearing District has been associated closely with the Belt Railroad of Chicago. These two connecting lines provide rapid and efficient service between each establishment in the large tracts and all the major railroads entering Chicago. The location of the other planned developments along the main lines of such carriers as the Milwaukee and the Northwestern railroads also has been satisfactory but not as good as a location on the switching and belt railroads. No doubt the trunk lines would provide more frequent service if the districts they serve were larger and more productive of freight, but under the circumstances it is difficult for them to do otherwise.

Seeing that the Chicago Junction and the Belt Railway play a vital part in the success of the older Central and Clearing districts, it is appropriate to examine briefly the principal features of the service

they offer. As many as four pick-ups daily are made by these lines. Carload freight moves out of the city on through trains after being picked up at the industrial siding. Less-than-carload freight, loaded in trap cars at the various establishments in the Central District and hauled to the road's near-by universal freight stations, is classified rapidly and reloaded into appropriate freight cars ready to be hauled by trunk-line carriers to their own freight stations for further classifying. Carload freight is handled in the same manner. In the Original Clearing District l-c-l shipments are handled by trap truck rather than by trap cars. From the universal freight station merchandise is trucked by the railroad directly to trunk line carriers. Without this service the shipper would be inconvenienced by having to truck his l-c-l merchandise, in some cases several miles, to the freight station of the trunk line over which it is to be shipped. Package car service to certain destination and gateway points also is excellent. Inasmuch as many industries are concentrated in the districts more pick-ups can be made than in the case of isolated plants. The trunk lines, too, favor the districts by making more frequent pick-ups and deliveries of freight. Cars usually are spotted promptly after being requested. Then, too, the movement of cars on the switching and belt lines is facilitated by the fact that the roads handle freight only; hence there is no interference from passenger trains.

In the handling of freight one organized District—the Pershing Road Development—is unique in the Chicago area. In this tract a huge universal freight station centrally located in the District is connected to the industries by a traffic tunnel. Package shipments from each establishment are hauled underground on trailers directly to the freight

station or other buildings in the District, hence no trucking to railroad freight terminals is necessary. .

An interesting organization in the Central District is the Traffic Bureau of Associated Industries which was established in 1913 by the plant executives under the auspices of the District. This bureau handles problems and complaints of shippers. Since it represents many establishments in a small area it has exerted considerable pressure on the railroads for improved service. To facilitate shipments in the Original Clearing District a private traffic bureau has been organized to handle such matters as routing, billing, claims, and rate cases. These traffic bureaus illustrate the value of cooperation. Yet without the District organization to take the lead, and without a concentration of many plants in a small area, these results might not have been attained.

In the Central and Clearing developments, as in all industrial areas, motor carrier service is becoming more and more important. No doubt the enviable location of Chicago at the hub of a great network of trucking routes is a favorable factor attracting industry to the districts, especially in recent years. As in the case of railroad transportation, though, it is not a distinctive feature since most industries are served by outside trucking firms many of whom have terminals near the districts.

Only the Central District's Original East and Calumet tracts are located along waterways. The latter division is still undeveloped while the Original East Tract is bisected by the South Fork of the South Branch of the Chicago River which is not now used for water transportation.

The principal planned developments on Chicago's South Side, and especially the original Clearing District, are close to

the Municipal Airport. Those projects on the North Side, and in particular the North Avenue District, are accessible to the huge new air terminal northwest of the city. For rapid travel of executives, salesmen, and others and for the handling of rush orders or perishable or quality merchandise, the splendid air service out of Chicago is an asset.

Public Warehousing. Since public warehouses commonly are needed in major industrial districts it is not surprising that service in the largest Central and Clearing tracts has been made more complete and inviting by the addition of these facilities. Although, as in the case of the Central District, originally promoted by the District organization, the warehouses now are operated by private establishments. The Pershing Road Development in particular has immense storage warehouses in addition to the army Quartermasters Depot. One structure, built by the Army during the first World War, but now operated by the United States Cold Storage Corporation, is among the largest cold storage units in the nation. These warehouses, used for storage, light manufacturing, and other purposes by outside as well as District establishments, perform a valuable service. Among other things they enable a firm with decided seasonal changes in production to lease extra space during peak months rather than invest in additional plant facilities.

Other Services and Facilities. The District organization in some cases, and the industries working on a cooperative basis in other cases, provide additional services and facilities in the large tracts, some of which are distinctive.

The subdivisions thus far developed are protected from fire by the Chicago Fire Department. The cost of this protection outside the city in the Original Clearing District is based upon the number of

pieces of equipment used and the number of hours it is in service. Payment is made by the industries through their insurance companies. The installation and maintenance of several group sprinkler systems in the Original Clearing District and of a central sprinkler system in the Pershing Road and Kedzie developments is paid for by the industries on a fee basis. The fairly wide spacing of fireproof structures in most of the tracts enables insurance companies to offer favorable rates.

All districts in Chicago are protected by the city police force. In the Central District added police protection and especially night watchmen also are provided on a fee basis. Inasmuch as the Original Clearing District is located outside Chicago it has been necessary for that development to employ its own police force. To furnish this service is one of the major tasks of the Clearing Industrial Association, a cooperative organization set up by the industries. To employ, full time, nine policemen who have been deputized by the county, each firm is assessed twenty-five dollars per month. In most cases the larger firms in all the districts hire their own night watchmen.

Industries in the original Central and Clearing developments, through their insurance companies, retain an ambulance, a physician, and other medical equipment and personnel to handle emergency cases.

Banking and club room facilities, located in or near the original developments also are provided by both districts. The club facilities, including dining room service, lounges, game rooms, and activities of a social and educational nature, tend to bring together business men with similar interests. Problems and difficulties are discussed and action is taken when necessary.

No doubt the opportunity of meeting in the club rooms was a factor of some importance leading to the organization

by the industries of four cooperative groups—the aforementioned Traffic Bureau of Associated Industries, the Clearing Industrial Association, the Pershing Road Association, and the Central Manufacturing District Club. The duties and accomplishments of the first-named organization already have been noted. In addition to maintaining a police force, the Clearing Industrial Association maintains men and equipment during the winter months to clear the streets of snow. It sponsors a bowling league, a soft ball league, a golf tournament, and other sporting events. It organizes committees to study taxation, traffic, employment, and other problems relating to the District and industry in general. In these and other ways it is performing a valuable service for the industrial community. The Pershing Road Association primarily was organized in order to unite the industries in a campaign aiming at widening Pershing Road between Ashland and Western Avenues. These efforts have been largely successful since the city recently widened and paved the roadway along most of the District's frontage. The Central Manufacturing District Club, organized and supported by industrial executives whose plants are located in the District, is primarily a center for social gatherings and business meetings with its dining room service a major attraction. Certainly the existence of a strong central organization guiding the development of a planned community of industries makes the formation of a cooperative association of District establishments much easier than in the ordinary industrial tract.

Labor Supply. The diversity and enormous extent of industrial activity in the Chicago area, resulting in a huge labor pool of skilled and unskilled persons from which industries may secure workers, is a fact emphasized in the promotional

efforts of the organized districts. But since establishments in the unorganized industrial sections also draw workers from this labor reservoir the Central and Clearing districts have no advantage, other than the fact that their well-built plants and landscaped surroundings offer employees a more attractive environment than does the ordinary industrial plant. However, it must be admitted that the wage rate and the time required in traveling to and from work are even more important considerations in determining a person's place of work.

Securing adequate labor has been less of a problem in the Central than in the Clearing District. Because of their location well within the built-up portions of Chicago the industries operating in the original tracts of the Central District (although facing stiff competition for workers from establishments located outside but near the districts) have been fortunate in securing adequate labor. On the other hand for a number of years after the project was launched the firms locating in the Original Clearing District were handicapped by remoteness in terms of distance and inadequate passenger transportation from substantial residential neighborhoods. In view of this condition the Clearing District at first could not be as discriminating as the Central District in selecting new establishments. Gradually, though, the city pushed out with many residential units having been built adjacent to Clearing since 1940. In spite of this condition the Original Clearing District, as later figures will show, has had a fairly steady growth. This would seem to indicate that the lower taxes and cheaper land outside the city, the splendid freight service, combined with the many other services of the District organization, more than offset the difficulties of marshalling a labor force. The Clearing District's decision to promote the Mont-

rose and Addison-Kedzie tracts on the North Side rests in part on the fact that this section of Chicago has a dense and growing population with more skilled workers and less competition for them than on the South Side. From the labor standpoint, then, these districts are well located. Moreover, they are fairly close to the highly desirable North Shore residential suburbs where many plant executives live.

A recent development, not initiated by the Clearing District but by a war veteran, is the establishment of an employment bureau near the Original Clearing District. This is a valuable service. Among other things it has handled the reemployment within the District of workers formerly employed by Clearing industries.

The distance of most districts from commercial streets made it necessary for many plants to install some type of cafeteria service. Of course this is an added expense but since most employees thereby are kept on the premises during the noon hour and rest periods, less time is lost than when they leave the plant.

Growth of the Districts. Although the Central and Clearing districts have experienced a rather steady growth it has been more rapid during some periods than others. By 1917, ten years after actual development began, the Central District's Original East Tract rapidly had grown into a compact industrial community of almost two hundred establishments. Since by this date the Original East Tract largely was built up, the Central trustees acquired the Pershing Road property, then mostly vacant, and began constructing a series of huge loft buildings. The new district grew enormously in 1919 when the Army purchased land and had the trustees erect three immense six-story structures for a Quartermaster's Depot. As this tract was

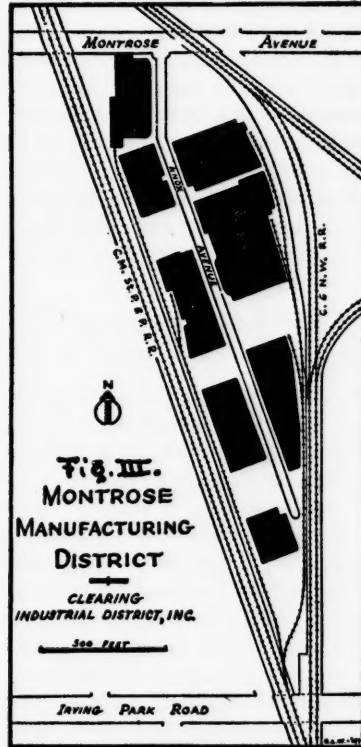
being occupied rapidly thereby narrowing a prospective client's choice of sites, and as more and more firms were requesting one- and two-story buildings which profitably could be built only on fairly cheap land, the trustees in 1919 purchased the Kedzie District still farther removed from central Chicago (Fig. 1). Rapid expansion during the next five years ran the total number of industries in all the Central District's developments up to three hundred and twenty three by the end of 1924. Although this figure, by the height of the financial depression in 1931, had declined to two hundred and eighty-eight, the district Trustees, in order to provide a wider selection of sites on fairly cheap land for new firms and for establishments moving away from the congested down-town sections, signed a contract with the New York Central Railroad enabling the District to promote a vacant tract of three hundred and eighty acres owned by the railroad company. Today this Crawford Development, although the home of almost a dozen establishments, is still largely vacant. As land there is valued at forty-five to seventy-five cents a square foot compared to values of one dollar and fifty to two dollars and fifty cents nearer the central portion of the city it can be held a fairly long period before development. Within the next decade the Crawford tract may become one of Chicago's greatest industrial communities.

It will be recalled that early development in the Original Clearing District was handicapped by inadequate transportation. After the Belt Railway of Chicago was organized in 1912 excellent freight service was available. The purchase that same year by the Clearing promoters, of a large number of street railway bonds, helped to extend street car facilities west along 63rd Street immediately north of the District. The paving

by the city of 63rd Street in 1923, after continued efforts by the District, also proved valuable. The splendid freight service, improved transportation for workers, low land values (only thirty cents a square foot in 1945 compared to one dollar and thirty-five cents in the Original East Tract), a tax assessment of one-half to one-third the city rate, and no zoning and building regulations other than those established by the District, so appealed to industrialists that the Original Clearing District expanded to forty-three establishments by 1922. During the boom period of the latter 1920's the District grew rapidly, reaching ninety-one concerns by 1928. Many of these were Chicago firms moving away from the congested portions of the city. In line with the majority of establishments that have located in the organized developments they were medium-sized light industries.

Seeing that only a few vacant parcels remained in their original development by 1939 the Clearing management began promoting new tracts both within and outside Chicago. The 51st Street District, like the original tract, is located just outside the city (Fig. I). Naturally Chicago benefits more or less from the development of these near-by districts but it profits more if industries are built within the city. Accordingly it was a matter of great satisfaction to many Chicagoans when the Clearing District promoted the Montrose Manufacturing District and the Addison-Kedzie Development in the densely populated northern half of Chicago, and the 95th Street District on the far South Side. Of these developments the Montrose District is of special interest to city planners since it illustrates the rebuilding along sound planning lines of a blighted industrial tract of eighteen acres (Fig. I). Here the Clearing organization, after consulting the Chicago Plan Commission,

did a commendable job of rehabilitation. The irregular-shaped Montrose tract, boxed in on all sides by the elevated main line right-of-way of the Milwaukee and Northwestern railroads, could be used satisfactorily for industry but for little else (Fig. III). In this respect it is typical



of many tracts in Chicago and other cities that are so hedged in by railroad facilities as to be unsuitable for good residential neighborhoods. Within the space of a few months the Montrose District was cleared of several old buildings and improved with a paved street, public utilities, an ornamental gate, and landscaping. Within two years after purchase five modern one-story industrial plants were in operation. The impact of the

war favored this rapid growth. Now the tract is almost entirely occupied by eight attractive industrial buildings. Since all the land and structures have been sold and the street dedicated to the city, the Clearing District has completed its job, but in carrying through the project it profited from both a financial and a prestige point of view. Of course the city, too, benefits in many ways from this planned improvement. The fact that the Clearing District's latest development—the North Avenue District—is located in the far West Side suburb of Melrose Park, brings up the question of industrial planning and the future role in this program of large-scale and well-financed real estate developers similar to the organizations just described.

The Future Role of Organized Industrial Districts in a Redevelopment Program

The Central and Clearing districts have proved by example that they can develop planned industrial communities. However, their ability to do this depends on a number of factors. By and large they have developed vacant land that was held as one parcel at the time of purchase, or at the most in only a few parcels. Also it was fairly cheap land located, with some exceptions, well out from central Chicago. Then, too, for taxing purposes most of it was assessed at a rather low rate at the time of acquisition. In view of these conditions and the further fact that they were prepared to make long-term investments and operate without profit for several years, the districts have been able to succeed in spite of slow expansion. Since the possi-

bility of slow development must be faced, it is doubtful if organizations like Central and Clearing could successfully redevelop a sizeable portion of a long-established industrial area where it may be necessary to purchase old buildings at a high price and then demolish them before new construction begins, and where land is expensive and difficult to assemble into economical units. The industrially-zoned land near the core of large cities costs too much for the growing number of manufacturers desiring horizontal line production housed in one-story buildings. This condition, combined with high taxes, especially personal property taxes and other factors, has caused some Chicago industries with highly-valued inventories to locate in the Clearing District and in other areas near and beyond the periphery of the city. On the other hand, in many instances, higher telephone, public utility, and insurance costs partly offset the advantages of a location outside the city. In general, though, it must be admitted that if taxes and land costs within the cities could be cut to a point where it is economically feasible to build one- and two-story buildings, to provide space for landscaping, and to hold vacant lots for expansion and automobile parking, and if land could be assembled easily into economic units, then organizations similar to the Central and Clearing districts might play an important role in the rebuilding of an industrial area. Under existing conditions their efforts will be confined largely to developing new industrial districts on vacant tracts located in the outer margins of cities and beyond.

Postwar Russia and Her Mineral Deposits

By WALTER H. VOSKUIL*

AT the close of World War I, the Soviet Union, defeated on the field of battle, the economic order destroyed, her armies facing a hostile world, and hunger stalking the land, reached a low level of economic activity. Steel production fell from a prewar level of 5 per cent of world output to a low of 2 per cent in the years following the war. The recovery since 1929 has been rapid and remarkable until it is now approximately 20 per cent of world output. Likewise, coal production fell from a prewar level of 30 million tons to a low of 7 million tons in 1920 and has since then reached a level of 160 million tons. Moreover, with the exception of small mining enterprises in the Urals, primitive in character, the mining and metallurgical industries, such as they were, were localized in the Donbas and the Ukraine.

In the intervening quarter of a century a new industrial district has arisen, which introduces a new factor in the economic balance and integrations of industry in Europe-Asia land mass. The Soviet Union will enter the world parley of nations in the impending period of world reconstruction, not a nation of peasants and with a rural economy, but a nation which has achieved industrial and military manhood. Within this area, occupied by a people conscious of their power and destiny, are found an intensity and extensity of industrial resources and potential manpower skill that may conceivably take its place with the coal and steel empires of western Europe and the United States. The agricultural areas and population have been equipped with the mainspring of a steel industry built

upon an adequate base of coal and iron ore and amply supported with alloying and accessory metals and minerals.

The concept of a natural marriage between agricultural Russia and industrial Germany has lost its validity. The Soviet Union, if the signs be interpreted correctly, chooses to build an economy which is predominantly self-sufficient. The Atlantic nations, therefore, look with concern and possibly with some apprehension in attempting to fathom the almost impenetrable mystery of the Soviet's relations to the western world.

With regard to the orientation of the Soviet economy within itself, the eyes of the young Russian turn eastward rather than westward. The cold, sandy, infertile areas of the Polish frontier will be forsaken for the semi-arid, mechanized farm areas of the western slopes of the Urals. The Russian mechanic seeks employment in Sverdlovsk, Molotov, Cheliabinsk, Magnitogorsk or the more distant Stalinsk in the Kuznets basin. Soviet agriculture is being oriented to the eastern industrial nucleus. Within this industrial empire, behind the vast distances of European Russia, the Soviet builds an impregnable military fortress. The frontiers will become buffer regions against the outside world.

This discussion will consider only the geographic and natural resource factors and the manner in which these factors form a basis of strength for Soviet isolationism.

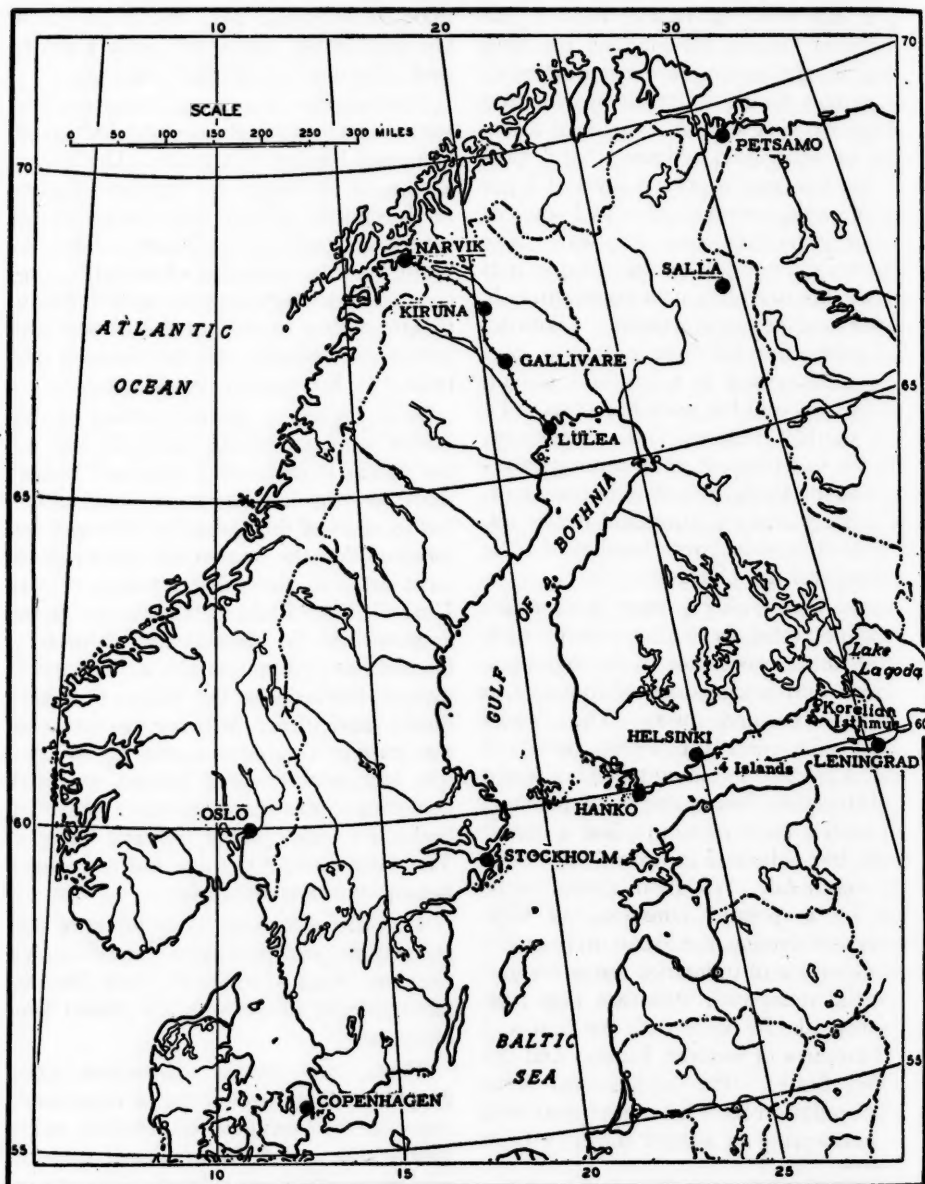
There are certain distinctive geographic and natural resource characteristics on the periphery of Russian territory which are of international import. The areas which are of particular interest

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are (1) Southern Manchuria, (2) the Near East (collectively embracing Iraq, Iran, the Dardanelles and Bosphorus, the Levant and Red Sea), (3) the Mediter-

anean, (4) the Polish coal fields, (5) the Swedish iron ores; and possibly the Ruhr should be added to these.

Before considering each of the zones in



further detail, it is well to remind ourselves of the fundamentals of national strength and the extent to which the Soviets are equipped in these fundamentals. These elements of national strength are (1) a virile population, (2) an adequate food supply, (3) mineral resources and operating mining concerns, and (4) a well-advanced technology and an industrial plant. In all of these elements, with the possible exception of the third and fourth points, the Russians are well advanced or on the way toward realization. These elements deal only with the internal strength of a nation. There is also the element of weakening a potential enemy by undermining one or many of these points of strength of a potential opponent. The Soviets appear to have done a remarkable job in building strength at home and seem to have done, or propose to carry out, certain steps which will accomplish the external part of a defense policy.

Internal Strength of the Soviet

The strength of the Soviets on the strategic borders is contingent upon and based upon the productive power in the deep interior. It is from this interior, impregnable against outside attacks, that must come the productivity in heavy industries to supply agricultural machinery, rail equipment, oil well and mining machinery and the diverse array of industrial tools and machines upon which an arsenal can be built. In the long run, a firm stand on the borders must be supported by a show of military force and an adequate industrial base to give strength to the military force.

The close of the World War in 1918 found the former Russian Empire in a state of almost complete industrial collapse. Production of steel which, in pre-war days, averaged almost 4 million tons annually came almost to a standstill in

1917 and 1918. In the meantime revolution swept the land; chaos from within and the enemy of the world from without threatened the new state. From these unpromising beginnings the Soviet Union rose to take a place by the side of the industrial nations of the west and to challenge the military might of Hitler's German Reich.

For the Soviets, in 1917, the immediate problems were twofold: the establishment of an adequate iron and steel industry and, second, the building of a national defense against the inevitable German attack. In its large perspective, the pattern of Soviet industry is clearly delineated. In the Ukraine, supported by the iron ores of the Krivoi Rog and the rich Don basin coal seam, was the logical location for an efficient iron and steel unit. The steel industry of Tsarist Russia was located here. And, in the Ukraine, after the revolution, was the earliest and most rapid development of postwar iron and steel industry. In the nearby Caucasus region lay the prolific oil-bearing Baku region, yielding from its many oil sands the almost incredible output of 550,000 barrels per acre. The most important of the alloying materials of steel—manganese—is available in adequate quantities in nearby Nikopol. There was one fundamental weakness. The exposed location of this industrial district was constantly vulnerable to German attack. It was the Achilles heel of Russian military strength and, if captured by the enemy, would bring about swift and certain defeat.

One of the first and main objectives, therefore, of the Russian leaders was to establish a second, and possibly a third steel center in the deep interior beyond the reach of invading armies. Such is one of the primary purposes of the iron and steel and associated metallurgical industries in the Urals, based on iron ore in

these mountains and the coal reserves of the Kuznets and Karaganda coal basins and known as the Ural-Kuznets Kombinat.

The Ural-Kuznets Kombinat. The Ural-Kuznets-Karaganda coal-iron-ore-steel unit is Russia's bid for industrial development and military security. This great industrial base, lying east of the Urals and extending to the valley of the Yenesei, is the epitome and expression of new Russia's will to industrial power.

The Kuznets coal basin is reported to be one of the greatest coal deposits of the world and, by far, the largest in the Soviet Union. The coals of this basin are considered to be the best as compared with those of the other coal basins in the Soviet Union. Here are found coals ranging from anthracites to dry long-flame coals. The reserves as reported to the International XVII Geological Congress in 1936 were placed at 450,000,000,000 tons.¹ With the opening of the coal resources of the Kuznets mines, coal was hauled westward in sufficient quantities to justify the erection of blast furnaces; the later connection by railroad of the Karaganda mines with the Ural rail network supplied a further stimulus to ferrous metallurgy in the district. Finally, the exploitation of the only considerable coal deposit in the Urals, at Kizel in the northern section of the Sverdlovsk oblast, and the success in producing metallurgical coke by mixing Kizel and Karaganda coals, have solved the fuel problem for the northern and central Ural foundries and steel mills. The largest of all, Magnitogorsk in the south, draws on Karaganda and Kuznets coal.

Iron and Steel in the U.S.S.R. Russia has risen to an important position among the iron-and steel-producing nations of the world. From the single area of produc-

tion in the Ukraine-Azov-Black Sea area in prewar Russia, the industry has been expanded until it now comprises twelve steel-producing districts in three general areas.

The southern area comprising the Ukraine and the Azov-Black Sea districts is the most important producer but is losing to the newer steel areas. In 1913 the former produced about two-thirds of the iron ore and pig iron. Southern Ukraine (Dnepropetrovsk) and Crimea are the principal sources of supply for this area. The Krivoi Rog iron mines in the Dnepropetrovsk region are located along the Zheltaya Saksagan and Ingulets rivers in a narrow zone of about 25 miles in length. For the past decade or more these mines have produced over 60 per cent of the total output of the U.S.S.R. The ore averages 57 per cent iron and is low in phosphorus.

The Eastern steel area, comprising the steel mills in the Urals of eastern European Russia and those in the Kuznetsk Basin of Central Siberia, ranks next in importance to the Ukraine-Donetz Basin region.

Originally the Ural-Kuznets steel unit was based on Ural iron ores and Kuznets basin coking coal resources. The latter is about 1200 miles distant from the Urals. Discovery of iron resources near this coking coal reserve and the opening up of Karaganda coal field farther to the west for the support of the Ural blast furnaces virtually created two steel districts out of the original Ural-Kuznets unit.

The central region, comprising the Moscow, Gorki, Kerov, and Zoronezh steel districts, is of lesser importance than the Donetz and Ural districts.

The Ural industrial district may now be described as an enormous complex of related and coordinated modern industrial plants, employing hundreds of thou-

¹ V. I. Yavorsky, "The Stratigraphy, Coals and Elements of Tectonics of the Kuznetsk Basin," *Abstracts of Papers* (International XVII Geological Congress: 1937) p. 53.

sands of workers engaged in extracting a long list of metals and minerals, in refining and concentrating these, and shipping them to plants in other sections of the U.S.S.R., or further processing and manufacturing them in the Ural zone.

That zone now extends from the potash beds of Colikansk in the north to the blast furnaces of Magnitogorsk and the oil refineries of Orsk in the south. On the west the district stretches to the new oil fields on the Kama River and to Stalingrad on the Volga; eastward it includes a number of new towns built around mineral deposits, and, as part of of the Ural-Kuznets combine, stretches 1,500 miles to the iron and steel center of Stalinsk.²

The Ural district is no longer a patchy series of small, unrelated industrial units; rather it is an extensive development of the riches of the area, large, modern mines and plants in close proximity, interconnected by new railroads, and amply provided with electric power from new, efficient stations.

Administratively, the Ural industrial district—part of the Russian Soviet Federated Socialist Republics—may be said to include the Molotov, Sverdlovsk, Cheliabinsk, and Chkalov oblasts, and the Udmurt and Bashkir Autonomous Republics. As pointed out above, however, it has close ties with industry east and south, and also with the northern oil and coal field at Pechora. Soviet authorities chart the district as covering 329,000 square miles.

Minerals Basis of Soviet Strength

The U.S.S.R. The Union of Soviet Socialist Republics extends 5,700 miles across Eastern Europe and the entire northern portion of Asia and from the Black Sea to the Arctic Ocean. The

Soviet Union comprises an area of approximately 8,200,000 square miles and embraces one-seventh of the land surface of the earth. Within the boundaries of this association of republics is found a wide variety of mineral resources, partly developed and not yet completely discovered—the raw materials of the industrial civilization which the leaders of that nation are attempting to create. The material elements of a potentially productive industrial society are present in varying degrees of quantity and availability. The progress in building this industrial society with the materials available under the plan of government development and control will be watched with interest during the coming years.

Industrialization in the U.S.S.R. has made great progress in recent years. Besides the mines and metallurgical plants that have been brought into production, several new industrial centers have been established within the last decade with manufacturing plants that utilize the products of mine and smelter and supply the country with most of its requirements of machinery, building materials, and other products which were formerly imported.

The mineral industries are being operated not necessarily on a commercial basis but on one of national convenience and necessity. The Soviet authorities are attempting to solve the problem of poverty in the midst of plenty and from it create ultimately a higher standard of living and a wider distribution of goods. In the meantime, however, the immediate objectives are to build up a self-sufficient industrial state and an adequate system of national defense. For the accomplishments of these objectives the mining and metallurgical industries occupy key positions.

Mineral Resources of the U.S.S.R. The Soviet Union has not been thoroughly

²J. S. Gregory and D. W. Shave, *The U.S.S.R., A Geographical Survey* (John Waley: 1944).

prospected in many regions because of inadequate transportation facilities. Therefore, it is not surprising that new sources of mineral supply are being found with the aid of several hundred geological parties in the field each summer. Extensive deposits of coal, petroleum, iron ore, and other minerals, hitherto unknown, have been discovered as a result of intensive exploratory work in the last decade. Data of production of the several minerals are not always reliable and are frequently not available.

Nevertheless, in such basic minerals and metals as coal, petroleum, iron ore, bauxite, copper, manganese, phosphate rock, potash and salt, the U.S.S.R. is an important producer and has expanded rapidly in the past few years. The problems of exploitation are: (1) location of associated ores, (2) transportation facilities: rail and water, (3) technical skill, and (4) purchasing power.

Iron Ores of the U.S.S.R. The reserves of iron ore are estimated at 9,450,000,000 tons compared with 9,850,000,000 tons in the United States. This estimate excluded the enormous reserves of the low-grade iron ore deposits such as the Kursk and Krivoi Rog Quarzites, which together amount to 241.3 billion tons.³ Estimates for individual districts are as follows:

TABLE I.—ESTIMATES OF U. S. S. R. IRON ORE RESERVES*

District	Reserves in billion tons
Southern Ukraine:	
Dnepropetrovsk	1.2
Crimea (Kerch).....	2.7
Urals:	
Sverdlovsk.....	.5
Bakal.....	.1
Magnitnaya.....	.5
Orsk.....	.4
East Siberia:	
Kuznetz.....	.3
Other.....	.7
Central Russia.....	1.4
Caucasus.....	.2
Kola Peninsula.....	.4
Northern Region.....	.3
Other.....	.7
Total.....	9.4

Type of Ore (by districts as listed above)	Iron content percent
Hematite.....	50-60
Limonite.....	30-40
Mixed.....	30-50
Siderite, limonite.....	32-42
Martite, magnetite.....	35-55
Limonite, laterite.....	30-40
Magnetite.....	40
Hematite.....	50-60
Limonite.....	30-40
Limonite.....	30-50
Quartzite.....	30-50
Limonite.....	30-45

"Ukraine. The Krivoi Rog iron mines in the Dnepropetrovsk region are situated along the Zheltaya Saksagan and Ingulets Rivers in a narrow zone over a length of about 25 miles in a northwest-southeast direction, the ore occurring in beds several feet thick or forming huge chimney-like bodies a few thousand feet in length and depth and 30 to 150 feet in width. For the past decade or more, these mines have produced and still do produce over 60 percent of the total output of the U.S.S.R. The ore is essentially martite associated with hematite and magnetite, and the product averages 57 percent iron, 8 percent silica, 0.25 percent manganese, and 0.05 percent phosphorous.

"Underground mining methods are used for the most part; at the larger mines sublevel stoping or caving systems are followed, and the output per man-shift averages about 5 tons.

"Urals. There are several iron-ore-mining districts scattered over the Urals, by far the most important being that of Mount Magnitnaya at Magnitogorsk, 150 miles southwest of Chelyabinsk, with an annual output of nearly 6,000,000 tons. Here the ore is surface-mined, and the output per man-shift is 8 tons. The ore averages about 45 percent iron content. Next in importance as producers are mines that center around Sverdlovsk, namely, those of Mount Vysokaya with about 700,000 tons a year, those of Bakal with 500,000 tons, and those of Blagodat with 250,000 tons. There are other mines in the Urals with smaller production, such as the titaniferous iron ore mine at Kusa with 75,000 tons a year, besides enormous low-grade deposits of concentrating ores, which are being studied."⁴

* *Foreign Minerals Quarterly*, Vol. I, No. 2, Section 2, June 1938, p. 7., U.S. Bureau of Mines.

⁴ *The Iron and Steel Industries of Europe*, (U.S. Bureau of Mines: 1939) Economic Paper 19, p. 60.

Ore from Ural mines is smelted and fabricated in large plants in the district, all built since 1918. At that time smelting had been carried on for nearly 200 years, but the methods previously used were primitive, the furnaces small, and the fuel was locally-burned charcoal. Present plants are large, use local or imported coal, and are modern in every respect. Total reserves of iron ore in Urals are estimated at 1,391,000,000 metric tons.

Coal Resources of the U.S.S.R.

The iron and steel industry of the U.S.S.R. is supported by coking coal deposits both in European Russia and in Siberia. Intensive exploration by geological survey parties in the Soviet Union has disclosed coal reserves in Central and Eastern Siberia far in excess of the well-known coal fields of the Don region. Most significant of the Siberian development is Kuznetsk Basin in west central Siberia. Important coal deposits also exist in Moscow basin, the Urals, and Siberia. Nine-tenths of the reserves are credited to Siberia. Reserves by basins are shown in the following table:

TABLE II.—COAL RESOURCES IN MILLIONS OF METRIC TONS*
EUROPE

Moscow.....	12,400
Urals.....	7,649
Donetz.....	88,872
Small basins.....	4,943
Total.....	113,864
Asia	
Kansnetz.....	450,658
Minausinsk.....	20,612
Chulym Yenisev.....	43,000
Irkutsk.....	81,397
Bourea.....	21,116
Karakhstan.....	62,798
Other basins.....	777,416
Kansk.....	42,000
Total.....	1,503,997
Grand Total.....	1,617,861

*Source: *International Congress.*

The most important coal-producing region in European regions of the Soviet

Union is the Donetz Basin which lies directly north of the northeast portion of the Sea of Azov in the Ukraine. It is situated in the immediate vicinity of iron ore deposits of the Krivoi Rog. The estimated reserve of 71,000 million tons constitutes one of the largest and richest coal fields in the world. In volume of reserves, the Donetz Basin holds fourth place in Europe—after Germany, the United Kingdom, and Poland—and eighth place in the world. In this basin both anthracite and bituminous coal of good quality are found, having a calorific value of approximately 14,000 British thermal units. The fact that reserves of coal, iron, manganese, and limestone are all available within a short distance of each other creates an unusual resource foundation for the development of an industrial center.

The Kuznetsk fields in western Siberia contain large reserves of high quality coal, much of which is suitable for coking. The Karaganda coal reserves in the southeast and others in northeast Siberia and in the Far East also are important.⁶

Summary of Primary Raw Materials

In the production of iron and steel the Soviet Union in 1937 was the third most important country.⁶ The phenomenal increase in output, especially since 1930, and the consequent decrease in dependence upon foreign sources for iron and steel have been striking developments. Since the change in government in 1917, the efforts of the state have been directed toward self-sufficiency in industrial products. The ferrous and other basic industries are owned and operated by the state and have been developed in accordance with a national system of economic planning. The establishment of an ade-

* *Abstracts of Papers (International XVII Geological Congress: 1937).*

⁶ *The Iron and Steel Industries of Europe*, (U.S. Bureau of Mines: 1939) Economic Paper 19, p. 4.

quate iron and steel industry was one of the chief objectives of the state. Mines were mechanized, and large modern plants for the manufacture of coke, pig iron, ferro-alloys and iron and steel products were erected. In an effort to achieve self-sufficiency and security from military attack, the plants were not necessarily located with the objective of most economical production. Some of the deposits of iron ore and coal are located far from consuming centers. Large tonages of these materials are moved by rail, the principal means of transportation. When total employment is considered, i.e., manpower used in long distance transportation of raw materials and finished products to the consuming centers as well as the labor employed directly in the mining and metallurgical enterprises, the output of steel products per man is probably far lower than in the steel centers of the western world.

Steel Alloying Metals. Of the steel alloying metals, the U.S.S.R. produces two in significant quantities: manganese and chromium. Small quantities of nickel and tungsten output are also reported.

There are five mining districts in the U.S.S.R. that produce manganese ores, the largest being the Nikopol district in the Ukraine and the Chiaturi in Georgia, which together contribute more than 90 per cent of the total output. The other districts are in West Siberia and in Orenburg in Middle Volga and Bashkir in the South Urals, but these are still in the developmental stage. Reserves of manganese ore in the Nikopol district have been estimated at 50 million to 298 million tons.⁷

The Georgian manganese deposits of Chiaturi probably are better known than those of any other country, as they have been the largest world producers of high-grade manganese ore. Most of the ore

for export comes from these mines, while domestic demands are supplied from the Nikopol deposits. The ore reserves in the Chiaturi district were estimated in 1931 to be 163 million tons containing 43 million tons of manganese.

Because of the demand for manganese ore at the new iron and steel centers in the Urals and Siberia, certain newly-discovered deposits are being developed in Bashkir and Kazakhstan in the Sverdlovsk region in the Urals and West Siberia. New deposits are also being developed in the Metreev Kurgan district near Taganrog on the Sea of Azov.

Chromite. The Soviet Union is the world's largest producers of chromite. In 1935 it supplied 22 per cent of the world's output. Southern Rhodesia, Turkey (Asia Minor) and the Union of South Africa and the Soviet together account for three-fourths of the annual supply. Moreover the Soviet is the only major consuming country which supplies its own needs. With this exception the principal producing countries consume only small quantities of chromite and the major consuming countries produce only a small fraction of their requirements.

The principal deposits in the Soviet Union are those at Saranovskoe in the Sverdlovsk region (Urals). Developed ore is estimated at 1,000,000 tons. Other deposits of considerable significance are located at Kluchevskow, 12 miles west of Sverdlovsk, with an estimated reserve of 631,000 tons, and the Gologolski deposit about 6 miles west of Sverdlovsk, with an estimated reserve of 163,000 tons of high grade ore. The Verblyvzhi Gora deposit at St. Kartaly, the railway junction to Magnetogorsk, is another deposit with estimated reserve of 170,000 tons.⁸

Refractories and Fluxes. The Soviet iron and steel industry is provided with mag-

⁷ *Ibid.*, p. 61.

⁸ *Ibid.*, p. 63.

nesite and fluorspar for refractories and fluxes for the steel industry.

Other iron alloying metal produced in small quantities are tungsten and nickel. Domestic supplies appear to be inadequate and imports of these are necessary for the steel industry. Petsamo should make Russia independent.

Other Minerals. The Soviet produces also substantial quantities of aluminum, copper, lead, zinc, potash and phosphates.

Mineral Reserves of the U.S.S.R. in an Industrial Economy. The extent and distribution of mineral resources in the U.S.S.R. are known only in part, and production data are incomplete or unavailable on many mineral commodities. Nevertheless, information on the basic mineral raw materials of industry are sufficiently detailed to indicate adequate supplies for extensive industrialization.

Soviet Position in Relation to Peripheral Resources

The outer boundaries of the Soviet Union are contiguous to or politically adjacent to five significant mineral resource zones all of which enter strongly into international calculation. These are the mineralized zones of southern Manchuria, the Near East oil fields, the Polish coal fields, the Ruhr, and the iron ores of Sweden. In each of these districts the Soviets are seeking a place of influence.

South Manchuria. All things considered, the Manchurian base offers the best possibilities for the development of a Far Eastern steel industry. The location of coking coal, accessibility to water ports, and the availability of ores from overseas points by water transportation continue to make this district more favorable than other possible sites.

Geographically, Manchuria is well positioned to play a leading role in the affairs of the Far East. With an area of

approximately 500,000 square miles, a fertile soil and a climate favorable to wheat growing, this central plain can become one of the great granaries of eastern Asia.

Coal and iron, the two minerals most fundamental to modern industry, have long been known to be present in quantity, but until the results of the Japanese explorations became available, knowledge of many of the principal deposits was lacking, and the iron ore was believed to be of low grade. Detailed surveys disclose extensive coal deposits, the largest and best known of which is at Fushun, near Mukden. The main coal bed varies from 130 feet to 430 feet.

The coal is excellent for steaming purposes but is rather mediocre coking coal. Japanese engineers estimate the reserve in the Fushun coal field at one billion tons. Several other coal fields are productive in Manchuria also, among them the important Penshihu field on the railway line between Mukden and Antung. Substantially all the coke made in Manchuria was made in whole or in part from Penshihu coal. While there are wide differences of opinion on the total reserves of coal in Manchuria, recent estimates place the figure at 9 billion tons.

Local iron ores have occasioned the building of two centers of iron production, one at Anshan and another at Penshihu. During the period of Japanese occupation additional iron ore deposits were found, some of which are rich ore, varying in size from 5 million to 25 million tons. Bain concludes that the "new ores and the new processes place Manchuria in a strong competitive position among world iron and steel producing centers."⁹

Southern Manchuria was the base of operations and the basis of Japanese

⁹H. Foster Bain, "Manchuria: A Key Area," *Foreign Affairs*, October 1946, pp. 117.

domination of the Asiatic mainland and a springboard for a possible attack on eastern Siberia. From the Russian point of view, southern Manchuria offers, as a minimum, a defense against possible Japanese aggression, however fantastic such a possibility may seem at the moment. For an aggressive-minded Soviet, southern Manchuria is a strategic location for domination of China and control of the Chinese coast. That the Soviets may regard control and occupation of southern Manchuria as essential to their plans whether those plans are limited to defense or envisage aggression must be regarded as a possibility.

Such a policy on the part of the Soviets will have a profound bearing upon the economic development of southern China and Manchuria. The fuel resources of the area and the steel made from local and imported ores may be used mainly for the production of military equipment. The availability of steel for tools, implements, and machinery, so badly needed in the Orient will be curtailed or overshadowed by military uses. The future of an industrial program in China may well hinge upon Soviet intention in this sector.

The Near East. The central fact in the Near East is the vast and as yet unmeasured reservoir of oil in the lands adjacent to the Persian Gulf. The area in question is comprised of Iran, Iraq, Saudi Arabia, Kuwait, Yemen, and Bahrein island, and Egypt. The role of oil in military power, and in industry in its many ramifications points only in one direction—upward. The role of oil in the Near East grows in importance and significance as it becomes evident that it now and, in the foreseeable future, will stand out as one of the vast low cost sources of world oils. The significance of this area is further increased by reason of its strategic position on the cross-roads of the world's busiest commercial waterway.

Its value as a resource is further enhanced by its proximity to the Black Sea area with its industrial and agricultural resources adjacent to this warm water inland sea.

The Near East oil looms large in international affairs because of the vital interest of the Mediterranean and western European nations in this oil supply. There is no reserve of oil in western or Central Europe worthy of mention in terms of large scale requirements. Even the Polish and Rumanian fields are merely supplementary sources. In the prewar years the nations of western Europe depended upon South America, the United States, and the Near East for crude petroleum and refined products, in the order named. But changing conditions in the oil industry of the world make it appear doubtful whether this pattern of oil supply will continue in the future. The period of abundance of low-cost oil in the United States, and in exportable supply, is being succeeded by a period of limited discoveries, higher-cost crude oil, and a gradual tendency of imports to overtake exports. The output of South American crude has, in the meantime, increased, but, more and more, the United States is looking in this direction for supplementary oil supplies, especially the heavy bunker and industrial, refined products. Competition between the United States and western Europe for Venezuelan oil will become more keen.

In the meantime the Persian Gulf area is proving to hold a vast reservoir of low-cost oil far beyond early expectations. The eyes of the world turn to the oil bearing zone and scan, with anxiety, the possible indications of the Soviet's attitude towards this zone. With respect to the oil needs of the Soviet we do not know whether this oil supply is a vital need to sustain Russia's economy and to replace the famous Baku field which seems now

to be declining somewhat or whether this is being accomplished by newly discovered oil fields within Russia itself as, for example, in the Emba basins.

There is, however, another possible interest of the Soviets in this oil region and that is, in a struggle for power with western Europe and the United States; whether this struggle remain in the realm of diplomacy, or whether it become armed conflict, it is in the interests of the Soviets to prevent the flow of oil westward through the Mediterranean. Or, even if a conflict is not contemplated or appears in the offing, the eastern Mediterranean, if by chance it becomes firmly under Russian control, may be viewed by them as a defense measure by depriving potential enemies in western Europe of an adequate supply.

However, in evaluating the role of oil as a blue chip in the struggle for power in the Near East and Mediterranean, it should be included in an integrated view of the full industrial potentialities of this region, with its attendant possibilities of political power. Oil—atomic age or no atomic age—is still one of the most important raw materials upon which modern powers and modern civilization rely in peace or in war. Oil in the Near East rises far above even this general significance when it is considered in conjunction with the iron ores of the Krivoi Rog, the coal of the Donetz, and the ferro-alloy metals in Georgia and Turkey. Together these resources supply the foundation materials of a powerful world industrial unit. Climate, soil, topography, configuration of land and water bodies, primary fuel (coal and oil), iron ore, and ferro-alloy resources unite to make this one of the potential industrial power centers of the world. Conflicting interests of European powers have prevented the acquisition of this region by any one of the large European powers. This

factor, and this alone, may have prevented the development here of an industrial power unit comparable in scope with that of the British iron and steel unit or that of the Ruhr-Lorraine region.

Consider the possibilities of the physical resources of the area if it were under unified management. The coal and iron of the Donetz Basin are adequate in quality and quantity to support a major steel-manufacturing industry. To the north lie the rich Ukrainian wheat lands, a potentially vast market for industrial products. Added to this are the smaller but not insignificant markets of the Mediterranean states to the west and the markets of Turkey and the Levant to the east. In the midst of this area is the land-locked expanse of the Black Sea, a warm-water body which can safely shelter a navy against any possible foreign attack. For the operation of such a navy ample resources of low-cost oil are available.

That the Russian leaders are fully aware of the potentialities of this region, there can be small doubt. The Black Sea area, under unified control would carry a serious threat to the freedom of the eastern Mediterranean and Red Sea areas. The flow of oil, ferro-alloys, and other raw materials essential to the economy of western Europe would be dictated by Russian policy.

An attempt on the part of the Soviet government to establish Russian political and Military hegemony in the territory adjacent to the eastern Mediterranean can be made effective only if Russian power is firmly entrenched on this inland waterway including the Red Sea Passage. Hence, the attitude of the Soviets on Trieste, the Dardanelles, Salonika coast, Libya, Eritrea, and Yemen take an added significance. A Russian trade mission to Yemen,¹⁰ ostensibly for the purpose of investigating the supposed great wealth

¹⁰ *New York Times*, December 5, 1946.

of this Arab state, may also have in mind the question of a strategic location on the Red Sea.

Finally, Near East oil is of essential interest to America in more ways than one. Even though the major part of this oil will move to European markets and, secondarily, to Asiatic and African markets, its relation to the American economy lies first in restoring the productivity of Europe and increasing its effective purchasing power of American goods; secondly, if unfortunately, a struggle of warlike proportions arises between the west and the Asiatics, the United States will need all of the manpower of western Europe to win. We must bear in mind that we are indissolubly linked in war as in peace to western Europe, and we may well include South America also.

Oil in the Near East, therefore, in effect, becomes oil for America, for, although it comes to our shores only in small amounts, its major movement to western Europe means a movement of oil to peoples and nations where fortunes are indissolubly linked with our own.

The Polish Coal Fields. From the Near East-Mediterranean areas, we turn to examine the Polish coal fields. The incorporation of postwar Poland into the Russian zone of influence has brought about an orientation of Polish industry toward the East. The coal fields of the Upper Silesian field in Poland contain the thickest coal beds in Europe and mining costs here are the lowest on the continent. Mining conditions are less difficult than in the Ruhr. The East Upper Silesian coal field in Poland and the Upper Silesian field in Germany together supplied fuel and power for the industries of eastern Germany and the newly-created southwestern Poland.

After the exclusion of Polish coal from the German market in 1925, the Polish coal operators entered the Scandinavian

market. A nation-wide strike in the British coal fields in 1926 and the cessation of exports from these latter fields opened the opportunity to the Polish coal industry to enter this market. As a result of this prolonged strike, the British never completely recovered the Scandinavian markets, particularly those in Sweden. Poland maintained a share of the market thereafter. This was the market pattern in existence in Scandinavia at the outbreak of World War II.

During the war the Germans, in control of the Polish coal fields, expanded output to supply the fuel needs of the armament industry in the Silesian district. The rapid advance of the Russian armies into western Poland and eastern Germany prevented the retreating Germans from destroying the mines so that a valuable asset fell to the Soviets. With widespread demoralization and loss of production in the Ruhr and associated fields in western Europe, and a slow industrial starvation in progress, appeals were made to the Soviet authorities to permit shipments of Polish coal to western Europe. The replies were evasive but resulted in no coal.

Although of critical concern during the severe coal famine in western Europe in the immediate postwar period, a greater concern is the intention of the Soviet leaders with respect to the future disposition of the economic power of this coal district.

There are several factors which endow the Polish coal fields, amplified considerably as a result of the war, with special importance in relation to European economy. And not the least of these is that, on paper at least, they constitute almost the only source from which that country can obtain foreign exchange while, with British coal off the market and German supplies diverted into special channels controlled by the Allies,

many countries, especially those in the north of the continent, must regard Silesia as the chief source from which they can obtain supplies.

A second factor of special significance is the limited supplies of coking coal in East Central Europe and its concentration in Poland and Czechoslovakia. In the territories annexed from Germany, two important enterprises were taken over, one of them being the model mine of Beuthen which, of all the collieries in the new Poland, is the only one producing a good coking coal. It should be noted that the Teschen coal field, which was ceded to Poland after the occupation of Czechoslovakia has been restored to the latter after an acrimonious debate.¹¹

The third factor of specific significance and conceivably a permanent modification in the pattern of coal movements in western and central Europe is the position of Poland as a source of coal for Sweden and Denmark.

Overshadowing these factors and of specific significance is the question of Soviet influence for the economy and political leanings of eastern Germany and the Scandinavian states through the domination over Poland and Polish resources.

Soviet Attitude to the Ruhr Industrial District. Russian views on the settlement of the German problem appear to have solidified around four fundamentals believed essential to a just peace for Germany. These factors probably will form the basis for Soviet policy during the meeting of the Council of Foreign Ministers in Moscow. These fundamentals are:

- (1) A more intense application of denazification and demilitarization throughout the United States, British and French zones of occupation.
- (2) Formation of a central German government and organization of a unified German economy under Allied control.

(3) Strictest control of the Ruhr industry, coupled with an increase in its output for the benefit of Germany's neighbors.

(4) Continuation of reparations deliveries of industrial capital equipment from the western zones to the Soviet Government.

It is the fourth point in the Russian plan that provides a clue to at least a partial bending of the Ruhr Valley economy toward the Soviets and its integration into the Soviet economic needs.

The Soviet policy, if any, appears to be an insistence upon reparations from capital assets instead of from current production, with a substantial proportion from the western zones. Carried to extremes, this policy would render it impossible for Germany ever to find her feet, not only by her own efforts, to pay for the food she so greatly needs, but also to perform her predestined role as the hub of European economy.

At this writing the American Secretary of State is proposing a plan for analysis and consideration whereby the level of German industry would be raised above that agreed upon at Potsdam with the proviso that reparations would be forthcoming out of the increased output. The agreed level of German industry did not provide for reparation out of current production. If the industrial level is raised, fewer plants will be available for removal on the reparations account.

The Russo-Scandinavian border. Northern Russia borders the eastern boundary of Finland, and beyond Finland to the west lies Sweden, partially separated by the Gulf of Bothnia. Still farther west between Sweden and the Atlantic Ocean is the narrow land strip of Norway. The attention of the world was focused on this area in 1939 when Russia made certain demands on Finland and was compelled to resort to arms to gain its objective. In the light of subsequent events the Russo-

¹¹ *Colliery Guardian*, Vol. 173, No 4483, p. 718.

Finnish War appears to have been for the Russians both a defense against Germany, always a potential enemy, and at the same time a counter offensive to attempt to weaken Germany's iron ore position. One may recall that the principal demands of the Soviets were (1) the destruction of the Mannerheim line, lying across the Karelian Isthmus, (2) a strip of territory along Finland's eastern border, (3) the right of way across the narrow waist band of Finland to Uleaborg on the Gulf of Bothnia, and (4) bases on the Oeland Islands. These apparently high-handed demands had, from the Soviet's point of view, a logical reason as a means of defense against Germany in a war which the Soviet government even then had regarded as inevitable.

The first demand, control by the Soviet army of the Mannerheim line, was designed to forestall any attempt on the part of the Germans to ferry troops into Finland behind this strongly fortified line while preparing to attack Leningrad from the northwest. The second point, cession of a narrow strip of territory, was designed to widen the distance between the national boundary and the line of the Murmansk-Leningrad railway. These two provisions may be looked upon primarily as defense measures. On the other hand, the third and fourth demands were distinctly counter offensive measures aimed at weakening the steel industry in the Ruhr Valley. Since World War I, when Germany lost the Lorraine iron ores to France, she turned to Sweden for ores, importing annually from one-third to one-half of her ore requirements from this source. The principal source of Swedish ore for the German industry is in Swedish Lapland north of the Arctic Circle. The two principal ore bodies, Kirunavasra and Gellivare, are connected by rail to the port of Narvik on the Ofoten Fjord on the Norwegian coast and

the port of Lulea in Sweden at the head of the Gulf of Bothnia. By virtue of the Gulf Stream, the port of Narvik remains ice-free; the port of Lulea is ice-bound five months of the year. Occupation of the Finnish coast opposite Lulea at the head of the Gulf of Bothnia and of the Oeland Islands at the southern entry into the Gulf by a strong Russian force would have the effect, not only of shutting off shipments of ore to Germany through the port of Lulea, but would also offer possibilities of preventing ore from leaving the Swedish mines for shipment through the port of Narvik. During the Finnish war there was much speculation as to the westernmost objectives of the Russian drive including such possibilities as an ice-free port on the Atlantic. It seems clear that the immediate objective was an attempt to move against the iron ore shipments to Germany.

In the Treaty of Moscow, March 12, 1940, confirmed by the armistice of September 19, 1944 and the peace treaty of February 10, 1947, the U.S.S.R. acquired the Karelian Isthmus and Lake Ladoga, four islands in the Gulf of Finland, a section in the vicinity of Sall, Fisherman's Peninsula and a lease on Hango.¹² These are substantially the objectives sought in the war with Finland in 1939.

With the turn of events after the defeat of Germany and a state of dissension between the Soviets and the western powers, the Soviet position in Finland and the Baltic Sea is a matter of moment. Since the Swedish ore is necessary for both the British and the continental steel industries, we may look for a diplomatic and economic struggle among the powers over the Swedish ores. In the meantime the Swedish economy is tied to

¹² Statement of Dean Acheson before the Senate Atomic Energy Committee on February 17, 1947, *New York Times*, February 18, 1947, p. 20.

Russia and to a dependence upon Russian-controlled Polish coal. Sweden currently receives three-fourths of its coal needs from Poland.¹³

Summary on the Soviet Position

The vast land area of Russia contains the raw material elements of a potentially powerful industrial nation. The industrial possibilities are especially favorable in one respect because of the interior location increasing the safety factor against external attack. The resources on the periphery, both those inside the Russian border as well as those in the boundary countries, can be used in such

a manner and with such effectiveness by the Soviets as to give rise for apprehension both among the western powers and in China. The position of western Europe with its highly industrialized economy within which its heavy population must find a livelihood, is in an especially precarious position. A move on the part of the Soviets to block the flow of oil through the Mediterranean and the iron ores of Sweden into the Ruhr Valley and to Britain would, in short order, paralyze western European economy and render their armed forces impotent.

¹³ *International Coal Trade*, Vol. 14, No. 2, February 28, 1947 (U.S. Bureau of Mines).

Reports and Comments

Rent Control and the Housing Shortage

A Commentary on *Roofs or Ceilings?* by Friedman and Stigler

Roofs or Ceiling? is an economic tract¹ published by the Foundation for Economic Education, Inc., a non-profit organization which has as its purpose:

"The explanation of the meaning of free private competitive enterprise. It seeks to demonstrate the difference between voluntary enterprise and coercion; between individualism and collectivism; between limited and unlimited government."

The arguments presented by its authors have been widely used in the controversy over the removal of wartime rent controls. The commentary which follows is by way of an evaluation of the factual basis and line of reasoning which led the authors to their conclusions.

MANY economic tracts involve such tortuous reasoning and so many qualifications of doubtful basic data that the central theme is obscured. To the contrary, in the case of *Roofs or Ceilings?*, Professors Friedman and Stigler reach a clear and uncompromising conclusion: "Yet we urge the removal of rent ceilings because, in our view, any other solution of the housing problem involves still worse evils."

Within the space allotted here it is not possible to cover all of the points made in *Roofs or Ceilings?* There is space, however, to raise some very grave questions concerning the soundness of a few of the more structural elements of the Friedman and Stigler arch.

On the basis of data found in (apparently) a single issue of the *San Francisco Chronicle* which was published one month after the earthquake of 1906, they conclude that space rationing through higher rents is the most "advantageous" solution of the current housing problem and that the advantage is even

clearer when all of the alternatives are considered.

One might wonder why they chose the extremely remote incident of the San Francisco earthquake to study the behavior of prices and utilization of space under conditions of a housing shortage and a free market. Isn't it possible that the situation in 1919-21 was more closely related to our own housing situation today? It existed entirely in a free market until it became necessary to put an end to fantastic rental increases by landlords through rent control legislation² in a number of states and cities.³ Here would have been fertile ground upon which they could have tested their thesis. Was the housing situation more or less critical in areas which had rent control laws than in those which did not? Did families double up more where rents were free to rise? Was the shortage alleviated more or less quickly in areas without rent controls?

¹ Milton Friedman and George J. Stigler, *Roofs or Ceilings?* (New York City: The Foundation for Economic Education, Inc., 1946).

² Rent control legislation was attacked as unconstitutional in the case of *Block v. Hirsh*, the Ball Act of 1919 (in which Congress enacted rent control for the District of Columbia) was declared constitutional. Justice Holmes' opinion declared that such legislation to meet an emergency was justified, although permanent legislation to the same effect might not be. Because the housing shortage was an established fact, the Court did not question the wisdom of the legislative body in finding that an emergency existed.

³ Before the end of the war, 126 communities had set up volunteer committees who undertook to investigate and adjust the various difficulties arising between landlords and tenants; these committees had no power of enforcement beyond publicity and support of public opinion. After the war, beginning in 1919, there was enacted for the District of Columbia and 10 states, rent control legislation of varying degree. A number of cities also enacted local ordinances. In Columbus, Ohio and Detroit, Michigan, for example, landlords who insisted upon raising rents had the assessments on their properties raised proportionately. The data for this footnote came from Drelich and Emery, *Rent Control in War and Peace* (New York City: National Municipal League, 1939).

The authors report that in the *San Francisco Chronicle* of May 24, 1906 "there is not a single mention of a housing shortage" and that there were listed "64 offers (some for more than one dwelling) of flats and houses for rent, and 19 houses for sale, against 5 advertisements of flats or houses wanted." And yet, they point out, after the earthquake "each remaining house on the average had to shelter 40 percent more people." This was indeed a remarkable demonstration of meeting an acute housing shortage quickly by space rationing through uncontrolled prices. We could wish that Friedman and Stigler had investigated and reported in detail upon the astounding elasticity of San Francisco houses, 1906 vintage! The revelations in the real estate advertisements contained in a single issue of the *Chronicle* seem somewhat inadequate.

Another portion of the Friedman and Stigler case rests upon the premise that today there is no really acute housing shortage but that the housing situation only *seems* desperate, because incomes have doubled, and rents have been held down through control. Thus the average family is encouraged to secure better housing, "for housing is cheap relative to other things." They say: "Actually, the supply of housing has about kept pace with the growth of civilian nonfarm population, as the following estimates based on government data show:

Date	Nonfarm		
	Occupied Dwelling Units	Civilian Population	Persons Per Occupied Dwell. Unit
June 30, 1940 ..	27.9 Mill	101 Mill.	3.6
June 30, 1944 ..	30.6	101	3.3
End of Demobilization ..	More than 31.3 Mill.	About 111 Mill.	Less than 3.6
(Spring, 1946)			

"Certain areas will be more crowded in a physical sense than in 1940, and others less crowded, but the broad fact stands out that the number of people to be housed and the number of families have increased by about 10%, and the number of dwellings has also increased by about 10%."

⁴ "Families—General Characteristics," *Population and Housing* (Sixteenth Census of the United States: 1940) pp. 4-5.

Their statement that the number of families and the number of dwellings have both increased by 10% is puzzling unless, of course, Friedman and Stigler mean the "family" according to Census definition. If they do, and there is no evidence to the contrary, then it must be recognized that the number of families *always* equals the number of occupied dwellings. Analysis of housing demand cannot proceed from the definition of family used by the Census, which definition is used only so that population can be keyed to dwelling space. It must start with a definition of family as a unit of housing demand or need.

At another place in their analysis, Friedman and Stigler do point out that a large proportion of those families who do not find separate dwelling units double up with friends or relatives, "a solution which has serious social disadvantages." Most people would agree with this statement. It is not reconciled, however, with the implications of the other statement that since 1940 the number of families and the number of dwellings have both increased by about 10%.

The fact is the increase in the number of "social families" has outstripped the addition of total dwellings and also the increase in occupied dwellings. The term "social family" includes not only the "census family" but also the "census sub-family," that is, "a married couple not including the head of the family, with or without children."⁴ It should be pointed out that this definition does not include, as a sub-family, a wife or husband with children whose spouse is deceased or absent. The exclusion of such families is particularly significant for the 1945 data presented below.

A recent article, "The Extent of the Housing Shortage"⁵ discloses that as of July 1, 1945 there were 41.3 million "social" families in the United States, both nonfarm and farm. This compares with 37.5 million "census" families. It is unfortunate that this article does not give separate figures on nonfarm and farm and that the data are for 1945 rather than for the spring of 1946 to make them comparable with the Friedman and Stigler material.

This article shows that from 1940 to 1945 there were increases in the number of occupied dwellings, or "census families," of 2.4 million; the number of "social families," of 3.8 million; the total number of dwellings of

⁵ P. M. Hauser and A. J. Jaffe, "The Extent of the Housing Shortage," *Law and Contemporary Problems* (Duke University Press: Winter 1947).

3.1 million; and in the number of dwellings "available for family use" there was an increase of but 2.1 million.⁶ According to "The Extent of the Housing Shortage," the number of sub-family groups on July 1, 1945 (excluding the then very important group of a wife, with or without children, whose husband was in the armed forces and who was living in a dwelling unit with some other family) was 3.8 million.⁷ There is evidence, therefore, of substantial pressure on our housing supply other than too much income and too low rents, a situation which must be recognized in any attempt to explain why the present shortage appears so acute.

Over-all totals or averages for most economic data are misleading. This is particularly true of housing data. Friedman and Stigler's general data obscure a very important point, namely, the distinction between owner-occupied and tenant-occupied housing. Their data indicate that the number of persons and the number of occupied dwellings have increased about in the same proportion. While this implies that there may be no increased physical shortage of space on a national average, does it hold for both tenant-occupied and owner-occupied units? In 1940 but 5.8% of all owner-occupied and 2.8% of urban owner-occupied dwellings has 1.5 or more persons per room, while tenant occupied units showed 11.4% and 7.6% respectively. If the over-all data for 1945 could be broken down they probably would reveal a greatly increased crowding in tenant-occupied units.

Another characteristic of housing which makes national analysis more difficult is that houses are fixed in location unlike other commodities which can be freely moved from place to place. It would be possible to have

an acute housing shortage in face of substantial vacancies, if the vacant units did not happen to be in the right location. It would also be possible to find fewer persons per room and still have a housing shortage if the age and sex composition of families changed.

The writer does not mean to imply that either of the above is true today. Even national vacancy is critically low and according to Friedman and Stigler, the space occupied per person is about the same as in 1940. The important point is that national figures do not always, particularly in housing analysis, reflect this situation in the individual localities of the country.

Further evidence of the pressure of "social families" upon the housing supply is to be found in the National Survey of Veterans' Housing Plans and Present Accommodations conducted in June 1946 by the Bureau of the Census for the National Housing Agency. Of the 5,450,000 married veterans of World War II living in nonfarm areas alone as of that date, 25% were living doubled up with other families and 5% were living with their families in trailers or rooming houses. Thus, 30%, or 1.6 million nonfarm families with a veteran as the head, lacked dwelling units of their own.

From July through September of 1946, the Census Bureau made surveys in 70 localities. In 50 of these more than 30% of married veterans' families were doubled up with other families or living in rooming houses. Practically all of the larger metropolitan areas were well over 30%: New York City and Essex County, N.J. 44%; Detroit, 39%; Boston, 42%; Cook County, Ill., 40%; Cleveland, 38%.

Several arguments made in *Roofs or Ceilings?* as refutation of objections to the removal of rent controls require particular comment. The first of the objections, as stated by Fried-

difference between "census families" and "social families" reported in the above article for that year. No comparable data are available for July 1945, but in February 1946 the Census reported a total of 2.1 million sub-families and 1 million secondary families consisting of one parent with a child or children. Of the latter, 900 thousand had female heads, of which 400 thousand had husbands in the armed forces. Married women, with no children, whose husbands were in the armed forces and who were living with other families were not counted. Even these data show substantial pressure, if of somewhat less magnitude than that indicated in "The Extent of the Housing Shortage." Moreover, Census estimates show a steep rise in sub-family groups since February 1946. The data for February 1946 were taken from *Characteristics of Secondary Families in the U. S.*, February 1946. U. S. Bureau of the Census, Series P-S, No. 15.

⁶ *Ibid.*, page 9. It should be noted that units available for family use included all occupied units plus vacant units for sale or rent which were deemed habitable. The definition "habitable" used by the authors was not the same for 1940 and 1945. In 1945 a vacant unit was counted as habitable, even though it needed major repairs, if similar units in the area were being occupied. Such data were not available for 1940 and the authors considered all units needing major repairs as uninhabitable. This tends to overstate the increase between 1940 and 1945 of "units available for family," since under the pressure of conditions in 1945 many units were being occupied which would have otherwise been left vacant.

⁷ The writer has no way of checking the various estimates made in "The Extent of the Housing Shortage." Evidently some adjustments were made to published Census data; for example, in 1940 the number of sub-family groups was approximately 1.7 million compared with the 2.4 million

man and Stigler, is that, if rent controls are removed, "the rich will get all the housing, and the poor none." Actually, no one would rationally contend that the rich would get *all* the housing. Friedman and Stigler should have answered the following objection (it is more difficult): the poor will have to double up or deprive themselves of necessary food, clothing, or medical care while the rich will keep their quarters and perhaps save less out of income or draw on accumulated savings. The authors' failure to meet this issue is based upon the apparently faulty assumption that the relationship between housing need and housing supply is no more unfavorable now than it was in 1940; thus they argue that, in the absence of control, price rationing would reestablish the 1940 relationships. But, they say, this is not in reality an objection to elimination of rent control but, if these relationships are socially unsatisfactory, they simply present "a reason for taking long-term measures to reduce the inequality of income and wealth."

Both the editor of *Roofs or Ceilings?* and this writer are puzzled by this last quotation, partly for the same reasons, partly for different ones. Neither of us understands what specific "long-term measures" Friedman and Stigler would advocate. The editor, however, (in a footnote) says "even from the standpoint of those who put equality above justice and liberty, rent controls are 'the height of folly'"—a statement none too complimentary to the authors. What concerns this writer primarily is, whether Friedman and Stigler would apply the same argument to a whole body of social legislation of the last 20 years. Would they constantly postpone social advance in wait for the millennium?

The second objection to which an answer is given is that landlords would benefit from abolition of rent control. This objection is in the nature of a straw man. Obviously, landlords would benefit. Proponents of rent control are not against landlords as a group. They advocate rent control because housing is scarce, and they do not think that a commodity which is scarce because of wartime restrictions on construction should be bid up in a free market to the benefit of those who happen to hold the commodity. The time to abandon rent controls is when landlords

and tenants are in more equal bargaining positions.

Nothing in the above statement is intended to convey the idea that this writer is opposed to a landlord receiving a fair return on his property. Rent control should not operate to cause the landlord a loss. If there are injustices to landlords in individual cases, these should be corrected.

The fact is, despite rent control, landlords generally have far from suffered. Even at the same rental, net income from property has materially increased because of essentially full occupancy, no cost of acquiring tenants, no collection losses, low turnover, little redecoration and a minimum of repairs and maintenance, curtailment of service and the very important fact that in many communities there had been substantial rental increases before the rent-freeze dates.

There is a question also of the extent of rental increase which has occurred, even under the OPA. Friedman and Stigler cite a 4% increase from 1940 to 1945. The figure they use is undoubtedly taken from the housing portion of the cost of living index for city families of the Bureau of Labor Statistics. And yet, the Bureau of the Census shows^{*} that from April, 1940 to November, 1945 the median rent of *all* tenant-occupied units in urban areas increased 24%,⁸ with units in good condition and with adequate plumbing facilities showing an increase of 16%, and the poorer units, that is those needing major repairs or lacking adequate plumbing, increasing 32%. It is interesting to note the larger rental increases in the poorer quality units. The writer has heard it expressed that rent control is more difficult of enforcement in the lower rent ranges. This is because low-income tenants are not generally as well informed of their rights, and even when informed, the demand is so great for low-rent units that tenants will do nothing in terror of losing the roofs they are lucky enough to have.

Friedman and Stigler grant that a valid objection against abolition of rent control would be "that a rise in rents means an inflation, or leads to one." They balance this objection, however, against what they claim to be the costs of continued control and later indicate that the inflation threat is not signifi-

^{*} Showing an increase in medians is not good statistical practice; use of means would have been better if they had been available at both dates. It is doubtful, however, if there would have been any material difference in this case.

^{*} "Housing Supplement," *Monthly Report of the Labor Force*, November 1945.

cant. Thus, their conclusion that rent controls should be abolished.

One must agree with some of the remaining points made by Friedman and Stigler; for example, the government's failure to control sales prices drove units out of the rental market and added inflationary pressure in both the rental and sales markets. Does the fact that we didn't go far enough constitute sufficient reason to withdraw protection from those families paying reasonable rents? There is also agreement that space rationing through a public agency is even more impractical now than during the war. No one has seriously proposed it recently.

They appraise quite well the social costs of "doubling up." They believe, however, that the character of doubling-up if rent controls are removed would be different from the present situation: "Doubling up would be by those who had space to spare and wanted extra income." This is too sweeping a statement. For the most part "space to spare" is in owner-occupied houses. These owners would not be affected in any way by rent increases. There is thus no increased economic motive for owners to give up any of their space to families who cannot afford to maintain separate accommodations—unless, of course, the general inflationary effects involved in relinquishing rent controls are far greater than anticipated by Friedman and Stigler.

The majority of families doubling up would be tenants who could not afford separate quarters without going into debt or reducing expenditures for other necessities; they are families who would be forced to double up even without adequate space.

In their broad assumption that families are paying too little for rent, Friedman and Stigler overlook a large group whose incomes barely kept up with increased prices, or even lagged behind. They overlook the important fact that in 1941, based on Bureau of Labor Statistics data, an urban family of 4 persons required a \$1675 income with a rent-income ratio¹⁰ of 20.2% to break even, compared with \$1950 income and 18.4% in 1944. By "break even" is meant the point at which income exactly equals expense, with zero debt and savings. Thus the average 4-person family needed \$275 more income to break even in 1944, but could spend only a lesser

proportion of total income for rent. When 1946 data are available, the writer is confident that the income will be higher and the ratio lower.

It is a wonder that, in weighing the possibilities of cost reduction in the building of new houses, Friedman and Stigler did not treat it in the same manner that they brushed off the objection that "the rich will get all the housing," namely, by advocating "the taking of long-term measures to reduce housing costs."

Not everyone would concede that the inflationary effects of abolition of rent controls would be as mild as Friedman and Stigler believe. Furthermore, they advance the argument that general inflation should be attacked directly—i.e., through higher taxes, decreased government spending, control over the stock of money—not through special controls which bottle up pressures for a time but do not remove them. We might also grant that the war should have been financed with even heavier taxes and less borrowing. Today the prospect is for decreased taxes and, despite lower governmental expenditures, no substantial reduction in the public debt.

It has not been possible to take up in detail all of the arguments presented in *Roofs or Ceilings*? However, in summary, the data on space rationing in a free market are not convincing, based as they are on fragmentary evidence of a unique experience in the distant past. The present shortage of space based on the number of "social families" was neglected. The assumption that all, or even most families can spend more for housing is too sweeping. No valid objections to relinquishing rent controls are considered: straw men are set up which are easily knocked down.

The present writer cannot agree that removal of rent controls would be the swift panacea visualized by Friedman and Stigler. Neither does he agree that what they call "the burden" would be distributed more equitably. The effect of the removal of rent controls would be felt most by the lower income groups who have little or no savings to draw upon and who would be forced to sacrifice other necessities to obtain housing, or subject themselves to the adverse social effects of doubling up mentioned by Friedman and Stigler.

(Opinions expressed in this article are those of the author and not necessarily those of the agency with which he is connected.)

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¹⁰ Rent here is defined as total housing expense, including all utilities. The rent commonly referred to is contract rent and would be much lower.

Economic and Housing Survey of the Orlando, Florida Metropolitan Region

THE economic and housing survey made of the Orlando Metropolitan Region¹ presented four techniques that may be used in studies of other urban regions: (1) the analysis of the economic base, (2) the housing market analysis, (3) the technique of delimiting high and low residential areas when census data on individual blocks are lacking, and (4) the determination of the total supply of vacant land suitable for new residential development. The purpose of the survey was to determine the number of homes which could be built and sold by private developers in the next ten years and the amount of land which would be required as sites for these new residences. To accomplish this objective it was necessary first to estimate the total employment which would be supported by the economic base of the Orlando region; second, the income distribution in 1945, 1950 and 1955; and the third, the amount of undeveloped land in the Orlando region suitable for new homes.

I. The Economic Base of the Orlando Metropolitan Region

The Orlando region has two major basic economic supports. It has the same warm winter weather of St. Petersburg and other central Florida areas which attract tourists and permanent winter residents and it is also the financial, marketing, wholesale and retail center of the Florida citrus belt. In the ten-county area surrounding Orlando, citrus crops comprised 86.5 percent of the value of all the crops in the 1944-1945 season. In this same area is located 64 per cent of the orange acreage, 56 per cent of the grapefruit acreage and 66.7 per cent of the tangerine acreage of the state of Florida.²

Citrus crops being of outstanding importance in the economy of the Orlando region, it is necessary to analyze the trends in the national production and consumption of citrus crops in order to gauge Orlando's future economic prospects. There are three main citrus crops raised in Florida: oranges, grapefruit and tangerines.

Trends in the Production and Consumption of Oranges

The outstanding feature of the trends of orange production has been the rate at which the Florida crop has increased relative to that of California, as Table I shows. Discouraged

TABLE I.—TOTAL PRODUCTION IN UNITED STATES;
ORANGES, GRAPEFRUIT, TANGERINES*
(000 omitted)

Year	Oranges		Grapefruit		Tang.
	Fla.	Calif.	Fla.	Texas	Fla.
1909-10	5,300	12,239	1,100	.....	.....
1910-11	3,600	17,078	1,200	.....	.....
1911-12	3,950	15,273	1,150	.....	.....
1912-13	6,700	6,870	2,000	.....	.....
1913-14	6,200	19,688	2,200	.....	.....
1914-15	8,000	17,407	2,400	.....	.....
1915-16	6,500	17,147	2,400	.....	.....
1916-17	5,700	21,315	2,500	.....	.....
1917-18	4,000	8,267	2,000	.....	.....
1918-19	6,000	18,315	3,500	.....	.....
1919-20	7,550	16,632	5,900	3	450
1920-21	8,700	23,711	5,800	5	700
1921-22	7,850	14,021	6,700	8	550
1922-23	10,150	21,283	7,800	35	750
1923-24	13,150	24,153	8,500	65	550
1924-25	10,400	18,506	8,900	301	900
1925-26	9,500	24,200	7,600	200	700
1926-27	10,100	28,252	8,600	361	900
1927-28	8,650	22,737	7,500	524	850
1928-29	15,000	39,159	11,300	753	1,500
1929-30	8,950	21,195	8,300	1,550	850
1930-31	16,800	35,179	15,800	1,200	2,400
1931-32	12,200	34,658	10,700	2,600	2,000
1932-33	14,500	34,265	11,600	1,440	1,900
1933-34	15,900	28,439	10,900	1,200	2,000
1934-35	15,600	45,047	15,200	2,740	2,000
1935-36	15,900	32,809	11,500	2,780	2,100
1936-37	19,100	29,827	18,100	9,630	3,000
1937-38	23,900	45,914	14,600	11,840	2,300
1938-39	29,900	41,420	23,300	15,670	3,400
1939-40	25,600	44,425	15,900	14,400	2,400
1940-41	28,600	50,778	24,600	13,650	2,700
1941-42	27,200	52,155	19,200	14,500	2,100
1942-43	37,200	44,329	27,300	17,510	4,200
1943-44	46,200	51,961	31,000	17,710	3,600
1944-45	42,800	60,300	22,300	22,300	4,000
1945-46	49,500	46,600	32,000	23,000	4,500
1946-47	54,500	53,700	30,000	25,000	5,000

* Source: U. S. Department of Agriculture, *Citrus Fruits*, October 1946. Revised estimate, May 10, 1947.

² The five counties immediately encircling Orlando are: Orange, (in which Orlando is located) Lake, Seminole, Osceola, Brevard. The five other counties on the fringe are Polk, Volusia, Indian River, Marion, Sumter.

¹ Homer Hoyt, Churchill-Fulmer Associates, "Economic and Housing Survey of the Orlando Metropolitan Region," A Report to the Orlando Board of Realtors. July 1946.

by the great freeze of 1894-1895, the Florida growers were producing only one-fifth as much as California produced from 1903 to 1905. California continued to hold a large lead with more than double the Florida output until 1935. The last ten years Florida has forged ahead until the production of 49,500,000 boxes in the 1945-1946 season outstripped the California yield for the first time and the current record-breaking Florida crop of 59,500,000³ boxes has also surpassed this season's orange output in California. The latest Florida orange crop is twenty times the average Florida crop of 3,000,000 boxes in the decade from 1903-1912, over eight times the 7,215,000 box average for the decade 1913-1922, and four and a half times the 13,200,000 box average for the decade 1923-1932. The United States Department of Agriculture estimates that the Florida crop will continue to expand as a result of increasing yields on the 100,000 acres of young orange groves planted in the last thirteen years, and with larger crops as a result of the increased application of fertilizer and a rise in the percentage of groves irrigated, a total crop of a hundred million or more boxes of oranges will be realized in another decade.

Although the total United States production of oranges has not increased as rapidly as that of Florida, yet it gained from 12,000,000 boxes in 1904-1905 to an average of 31,000,000 boxes from the five-year period, 1921-1925, and to an average of 112,000,000 boxes for the past four seasons. Exports of oranges, chiefly to Canada, ranged from only 3,828,000 to 7,597,000 boxes from 1937-1942, so that most of this greatly enlarged crop has been consumed in the United States.

How have the domestic consumers been able to absorb this nine-fold increase in the orange crop in the past forty years and what are the prospects for marketing expected the further increases in the orange crop in the next decade? Until the current season this extraordinary growth in the supply of oranges was utilized as a result of the following six factors:

- (1) An increase of 60 per cent in the national population from 1904 to 1945.
- (2) A broadening of the market as a result of the increase in the average family income, particularly from 1939 to 1944-1946 when the national income increased from \$71 billion to \$160 billion annually.

³ This was the estimate before the freeze of February 1947 reduced the total to 54,500,000 boxes.

(3) A great increase in the per capita consumption of oranges in the form of juice, as the importance of oranges as a source of Vitamin C was stressed.

(4) A sharp increase in the proportion of the Florida orange crop that was canned, as shown by the increase in the number of boxes processed from 36,000 boxes in 1931-1936 to 1,055,000 boxes in 1937-1938, and 17,000,000 boxes in 1945-1946. (See Table II.)

(5) The declining trend in the production of apples, one of the chief competitors of citrus.

(6) The large purchases of canned citrus juices for the armed forces during the war.

Doubt as to whether the domestic market can continue to absorb further increases in the production of citrus fruits was raised by the difficulties of marketing the current crop. The combined effect of a Florida orange crop of 59,500,000 boxes for the 1946-1947 season,⁴ a gain of 10,000,000 boxes over the preceding yield, a larger California orange crop, an overhang of 10,000,000 boxes of citrus in the form of canned juices at the beginning of the season, unusually warm weather in the fall and winter of 1946-1947 (which delayed the natural coloring of the fruit and injured its keeping qualities), a large apple crop and abundant supply of other canned juices—all these factors served to cause a sharp break in October 1946 in the prices of both fresh and canned citrus fruits. The citrus grower is the residual claimant, receiving what remains after picking, packing and shipping charges are paid—which are approximately \$2.25 a box for oranges shipped to the New York market.

Consequently, when prices for interior Florida oranges on the New York auction market declined from the OPA ceiling price of \$4.50 a box in the spring of 1946 to as low as \$2.25 a box in January 1947, the net return to the grower for oranges on the trees dropped from \$2.25 a box to nothing. Since the cost of cultivating, fertilizing and spraying was then at least 50c a box, this meant an actual loss of the growing cost on every box shipped. That part of the orange crop which was sold in early October brought higher prices and a severe freeze in February reduced the orange crop by 5,000,000 boxes so that there was a marked increase in the prices paid for Valencias and other late oranges, which reduced the extent of the growers' losses.

⁴ First estimate of the crop before the freeze of February 1947.

Nevertheless, this sharp break in citrus prices was particularly disquieting because it came at a time when the national income and overall consumers' expenditures were the highest on record. In periods of business depression citrus prices have dropped sharply as a result of the fall in consumers' incomes. Thus the net income to the grower dropped from \$1.15 a box for oranges in 1929-1930 to 14c a box in the depression of 1932-1933, rising again to \$1.06 a box in the prosperous years of 1936-1937, falling again to 20c a box in the business depression of 1938. With the rapid rise in the national income during the war and the great increase in the proportion of the product canned, the gross price of oranges per box rose from \$1.37 in 1939-1940 to \$3.17 in 1944-1945 and the net return to the grower rose for 17c to \$1.73 a box, a tenfold increase in the same period.⁵

When a marked increase in the orange crop can cause prices to break sharply in a period of high-level national income, a still greater decline in price might be anticipated when still a larger orange crop is brought to market in a period of general business depression. With over 100,000 acres of orange

groves planted in Florida in the last thirteen years (which have not yet reached full bearing age) and with further increases in yield expected as a result of increasing irrigation and the use of more and better fertilizers, the future supply of Florida oranges will be excessive unless the per capita consumption can be increased. Practically the entire gain in the orange crop will come from Florida alone, however, since California has only 5,589 acres of non-bearing groves.

There are possibilities for a marked increase in the per capita consumption of oranges. A higher level of national income will enable more families to enjoy fruits and vegetables that were once regarded as luxuries. And improvement in the grading of oranges so that shipments would be restricted to high-quality fruit will increase consumers' preference for oranges. The marketing of orange concentrates in dehydrated form and of orange juice in cans or bottles at filling stations and refreshment stands would extend the consumption into the summer months when the demand for beverages is at the peak. The amount of citrus juice consumed should be greatly increased even from the standpoint of health alone. Dietary authorities say that every one should have the daily equivalent of six ounces of citrus juice, which would only

⁵ Florida State Marketing Bureau, *Annual Fruit and Vegetable Report*, 1944-45 season, pp. 64-65.

TABLE II—TOTAL PRODUCTION OF FLORIDA ORANGES AND GRAPEFRUIT AND PROPORTION CANNED

	ORANGES			GRAPEFRUIT		
	Total Production Boxes	Portion Canned Boxes	Percent	Total Production Boxes	Portion Canned Boxes	Percent
1931-32.....	12,548,000	36,000	0.3	10,431,000	930,000	9.0
1932-33.....	14,964,000	50,000	0.3	11,926,000	2,750,000	23.1
1933-34.....	16,171,000	61,000	0.4	11,113,000	2,605,000	23.4
1934-35.....	15,590,000	178,000	1.1	15,243,000	5,603,000	37.0
1935-36.....	15,865,000	140,000	0.9	11,504,000	3,760,000	32.7
1936-37.....	19,461,000	620,000	3.2	18,121,000	6,685,000	37.0
1937-38.....	24,303,000	1,055,000	4.3	14,379,000	5,793,000	40.3
1938-39.....	30,015,000	1,867,000	6.2	23,050,000	8,395,000	36.4
1939-40.....	25,065,000	4,170,000	16.6	15,650,000	8,800,000	56.2
1940-41.....	28,752,000	3,941,000	13.7	24,387,000	13,871,000	57.0
1941-42.....	27,200,000	4,197,000	15.4	19,100,000	10,143,000	53.1
1942-43.....	37,200,000	6,438,000	17.3	27,300,000	17,584,000	64.4
1943-44.....	46,200,000	10,912,501	23.6	31,000,000	20,429,510	66.0
1944-45.....	42,800,000	14,344,000	33.5	22,300,000	15,136,000	68.0
1945-46*	50,000,000	17,000,000	34.0	32,000,000	21,500,000	67.2

* Source: U. S. Department of Agriculture, *Citrus Fruits*, October 1946.

be sufficient to maintain the minimum body requirements of Vitamin C. The consumption of all forms of citrus today amounts to an average of only two fluid ounces daily per capita.

The Trends in the Production and Consumption of Grapefruit

In contrast with oranges, grapefruit production in Florida has not expanded rapidly since 1940. Prior to 1930, Florida was producing 85 to 95 per cent of all the grapefruit sold in the United States, with a production ranging from 6,000,000 to 11,000,000 boxes annually from 1919 to 1929. (See Table I) The Texas crop began to gain rapidly from 1,140,000 boxes in 1933 to 10,200,000 boxes in 1937 and to 23,000,000 boxes in 1945. Arizona likewise greatly increased its crop. By 1943, Florida was producing only half of the nation's grapefruit although its production increased from 10,700,000 to 11,600,000 boxes annually from 1931-1934, to 32,000,000 boxes in 1945-1946. This greatly increased output of grapefruit was absorbed chiefly by canners who took 21,500,000 boxes of the 1945-1946 crop, compared with less than 1,000,000 boxes in the 1931-1932 season. (See Table II). Fresh fruit sales of Florida grapefruit have remained static at about 10,000,000 boxes annually in the last fifteen years, the entire increase in the crop having gone to the canners.

Although the Florida grapefruit crop in the 1946-1947 season was 2,000,000 boxes less than the crop for the preceding season, prices of grapefruit dropped in October 1946 together with other citrus fruits in both the fresh fruit and canned juice market. There was a large inventory of canned grapefruit juice and mixed grapefruit and orange juice carried over from the 1945-1946 crop. Only 21,000 acres of grapefruit groves have been planted in Florida in the last 13 years, so there will be no great increase in the future Florida grapefruit production. Nevertheless, the competition of increasing yields from Texas and Arizona and the great dependence on the canners for absorbing two-thirds of the crop, create the possibility of over-supply.

The Production and Consumption of Tangerines

Tangerines are raised only in Florida and their production has only doubled since 1939-1940, or from 2,400,000 to 5,000,000 boxes. Regarded as a fancy fruit, with the best market in the Christmas season, a new

demand for tangerines in the form of juice was created in 1946. Since few tangerine groves have been planted in recent years, the supply will not increase greatly in the near future, and the demand from canners in addition to fresh fruit consumption should absorb the supply at prices profitable to the growers.

Risks of Citrus production

Citrus production in Florida has a number of hazards which cause a variability in yields. There are risks of freezing, drouths, hurricanes and unseasonably warm weather, as well as insect pests and diseases. In 1894-1895 nearly all the citrus trees in Florida were frozen so that they had to be cut back to the trunk, because of the combination of an early freeze in December 1894 which weakened the trees and a late freeze in February 1895 when the sap was rising. Subsequent freezes such as in 1917, 1934, 1937, 1940, and 1947 when temperatures dropped as low as 20 to 25 degrees in central Florida, caused damage to the fruit and some tree damage particularly in low or cold spots, but no widespread freezing of trees. In no year since 1895 has there been a loss of 50 percent of the total Florida crop by freezing; and, with development of canning, it is now possible to save the frozen fruit if taken off the trees immediately. Hurricanes, which are always a possibility in Florida in September and early October, in some years have knocked part of the crop off the trees and have blown down a small proportion of the trees in some locations.

While the average total annual rainfall in the Florida citrus belt is ample or about 55 inches annually in central Florida, there are considerable monthly variations, particularly in the winter and spring months. The heaviest rainfall is from May to September inclusive, when the precipitation is usually ample, but dry weather in February and March may cause part of the young fruit to drop off. If there is an extreme scarcity of rainfall, however, the trees tend to have a late bloom when heavy showers come in April and May.

There was an increase in the number of groves irrigated from 4 to 39 percent in the last decade. Irrigation was profitable as the cost of pumping water from nearby lakes or wells was relatively low in proportion to the gains realized from increased yields sold at high prices.

Unseasonably warm weather in the fall and winter prevents citrus fruit from attaining its full natural color and the process of artificial coloring in rooms at high temperature tends to cause some deterioration in flavor and keeping qualities. Usually, however, there are sufficient periods of cool weather in central Florida in November, December, January and February to color the fruit naturally.

Insect pests are kept in control by spraying the groves four times a year. The Florida trees are unusually hardy and have a normal life in excess of 80 years. Even groves that have been neglected can be nursed back to full productivity by spraying and fertilizing. So far there has been no disease which has attacked and decimated entire groves. Care in selecting sites for young groves where there is air drainage and nearby lakes has minimized the risk of freezing. Hence the Florida groves have prospects of a very long productive life.

This somewhat extended analysis of the Florida citrus production in relation to national citrus production and consumption has been given to show that an adequate treatment of the economic base of any urban region requires the examination of the national market for its basic products and its competitive position with respect to other communities producing the same products. Since citrus crops are the chief basic support of the Orlando region this article has been devoted chiefly to them. A rapidly growing cattle industry, south of Orlando, celery crops in Seminole County, and other truck crops in the Orlando region also furnish basic economic support but it is not possible to analyze them within the scope of this article.

Future Population and Employment in the Orlando Region

While the increasing yields of the citrus crops in the Orlando region may force citrus prices to levels considerably below wartime prices, thus yielding much less to the growers, there are fairly good prospects that the marketing of larger physical yields will give employment to a greater number of persons in picking, packing, shipping and canning. It seems probably that Florida as a low-cost citrus producer will gradually gain a larger share of the national market for oranges, because there are so few non-bearing groves in California and because Florida is closer to the eastern half of the United States where four-

fifths of the population and wealth of the nation is concentrated.

As a result of the increase in the physical production of citrus crops in the Orlando region, it is estimated that by 1955 the number engaged in taking care of groves in the five counties immediately surrounding Orlando⁶ will increase from 5,000 to 7,000; the number engaged in packing citrus, from 7,000 to 12,000; the number employed in picking from 2,000 to 3,500; and the number of workers in canneries and orange concentrate plants from 3,500 to 10,000. This is a rise in employment in these phases of citrus from 15,500 to 32,500 or over 100 per cent. The increase in citrus production will also require a gain in the number employed in trucking, on railroads and on refrigerated ships. In addition there will be a continued growth in the number of retired people coming to the Orlando region. The raising of larger vegetable crops in the region will likewise give rise to increased employment. The growth of the cattle industry in Osceola County will create more basic jobs. There are opportunities for the expansion of consumer goods industries to supply the growing local population. All of these basic activities increasing the number of jobs, will give rise to increased employment in service lines, retail stores, the professions, utilities, restaurants, hotels and local government.

It was estimated that the total employment in Orange County, of which Orlando is the center, would increase from the 27,272 of 1940, and the estimated 35,000 of today, to 54,000 in 1950 and 62,000 in 1955. This would support a population growth in Orange County from 86,782 in 1945 to 122,000 in 1950, and 140,000 in 1955. It is estimated that the total employment in the five counties will increase from 55,000 in 1940 and the 66,000 of 1945, to 96,000 in 1950 and 106,500 in 1955, which will support a five county population—now 169,000—of 220,000 in 1950 and 250,000 in 1955.

This prediction of future population is thus based on the number of jobs which the Orlando region can offer and not upon an automatic projection of past population trends.

II. Market Analysis: The Number of Families and Family Income Distribution

In order to calculate the demand for dwelling units, it is necessary to estimate the num-

⁶ Orange, Lake, Osceola, Seminole and Brevard.

ber of families. This can be derived from the population estimates, by dividing the population figure by the estimated size of the family. Since the size of the average family is decreasing, it is expected that the number of families will increase faster than the population. If past trends continue, the average size of the family in Orange County will decrease from 3.43 in 1945 to 3.40 in 1950 and to 3.30 in 1955. Applying this family size to the predicted population, we find that the number of families in Orange County will increase from 25,300 in 1945 to 36,000 in 1950 to 42,400 in 1955. This means 10,700 more families in Orange County in the next five years and 17,100 more families in ten years. Applying the ratio of decreasing family size in the other four counties gives a total increase in the number of families in the Orlando five county trade area from 49,615 in 1945 to 65,300 in 1950 and 75,800 in 1955. This is a total gain of 15,685 families in the five counties in the next five years, and 26,185 families in the next ten years.

The demand for new houses in Orlando in the next five years will be derived chiefly from those families whose incomes exceed

\$3,000 a year, or those who are able to afford a new house costing \$6,000 or more. Family incomes in 1940 for cities or counties can be estimated from the figures on contract or estimated monthly rent given in the U. S. Census of Housing. In view of the doubling of the national income from 1940 to 1944, it is necessary to make estimates on the basis of the average increases in family income over this base period or by sample surveys. In the nation as a whole 26.6 per cent of all families had incomes of \$3,000 a year and over in 1945, as compared with only 11.7 per cent in 1939. In Table III, the distribution of family incomes in 1940 was determined by rents, while the number receiving incomes of \$3,000 and over in 1945 was estimated by doubling the proportion receiving such incomes in 1940. In the absence of any definite basis for estimating national income in 1950 and 1955, it was assumed that the same ratios of income distribution prevailing in 1945 would continue.

The increase of 5,785 families from 1940 to 1950 in groups earning over \$3,000 a year in Orange County, Florida, constituted the chief demand for private housing. By 1950

TABLE III—ESTIMATED NUMBER OF FAMILIES IN EACH INCOME GROUP IN ORANGE COUNTY AND FOUR* OTHER COUNTIES IN THE ORLANDO TRADE AREA—1940 TO 1955

	Orange County				Four Counties			
	1940	1945	1950	1955	1940	1945	1950	1955
Total Families.....	20,413	25,300	36,000	42,424	22,362	24,315	29,300	33,400
Under \$1,000.....	10,370	7,590	10,800	12,727	16,034	12,157	14,650	16,700
\$1,000 to \$1,999.....	6,614	10,120	14,400	16,970	4,987	9,726	11,720	13,360
\$2,000 to \$2,999.....	1,204	2,024	2,880	3,394	537	973	1,172	1,336
\$3,000 to \$4,999.....	1,817	4,301	6,120	7,212	693	1,216	1,465	1,670
\$5,000 and over.....	408	1,265	1,800	2,121	112	243	293	334

NUMERICAL INCREASE IN EACH INCOME GROUP

	Orange County			Four Counties		
	1940-1945	1945-1950	1950-1955	1940-1945	1945-1950	1950-1955
Under \$1,000.....	-2,780	3,210	1,927	-3,877	2,493	2,050
\$1,000 to \$1,999.....	3,506	4,280	2,570	4,739	1,994	1,640
\$2,000 to \$2,999.....	820	856	514	436	199	164
\$3,000 to \$4,999.....	2,584	1,819	1,082	523	249	205
\$5,000 and over.....	857	535	321	131	50	41
Total	4,587	10,700	6,424	1,953	4,985	4,100

*Lake, Seminole, Brevard and Osceola Counties

it is estimated that there would be approximately 8,000 families in Orange County with incomes over \$3,000 who would be able to afford new homes if construction costs can be stabilized at a level not over 50 per cent above that of 1940. Since there were not over 2,500 homes in Orange County in 1945 in the value class normally occupied by families with such income, there is a potential demand in the next ten years for at least 5,000 homes in Orange County by families who can afford to pay for new homes.⁷

The projected increase in the number of families in Orange County by 1950 is, however, 10,700 families. If 5,000 new homes were built there would still be a shortage of 5,700 dwelling units without allowing for any undoubling. Of the 10,700 possible increase in the number of families, 8,346 families will not have incomes sufficient to enable them to afford new houses without subsidies. Approximately 3,000 existing homes might be vacated by families moving into new houses, but there would still be a possible shortage of 5,000 dwelling units for lower income groups. Hence the anticipated growth of the Orlando region may be checked by lack of housing facilities for families earning less than \$3,000 a year.

All of the increased demand for housing in the Orlando region would have to be met by new construction, since there were no habitable vacant units available in early 1947.

III. *The Housing Pattern of Orlando and Winter Park, Florida*

In planning new residential developments, it is always desirable to ascertain the location of all the grades of residential areas from the highest value homes to the worst slums. This enables new communities to be planned that will be near, or in the line of growth of developed residential sections of substantially the same character, which tends to preserve the stability of neighborhoods. In all cities with a population of 50,000 or over it is possible to secure rental data by individual blocks, from which such maps can be constructed. Since the population of Orlando was only 36,736 in 1940, however, no U. S. Census block data were available. To secure a map showing the types of residential areas, it was necessary to secure the opinions of real estate men as to the average value of homes in different sections of Orlando and

Winter Park. The areas were classified according to the value of homes as follows: \$20,000 and over, \$12,500 to \$19,999, \$7,500 to \$12,499, \$3,500 to \$7,499, and under \$3,500. The consensus of a group of leading realtors was obtained and the areas established were checked by personal inspection. The resulting map, (Fig. I) shows a concentration of the highest rent homes in areas around most of the lakes, with the largest sector running north and northeast of the main business district through adjoining Winter Park. Another sector of high value homes extends southeast. The area of homes under \$3,500 lying just west of the main business district is the area occupied by negroes, which also is the area with the most substandard housing. Fig. I likewise shows the northward stringlike extension of the central commercial district along Orange Avenue pulled by the direction of growth of the greatest concentration of high priced homes northward and in Winter Park. It also shows the developing neighborhood business center at Colonial and Mills, showing a tendency towards decentralization even in medium-sized cities.

IV. *Supply of Land Available for Home Sites in the Orlando Region*

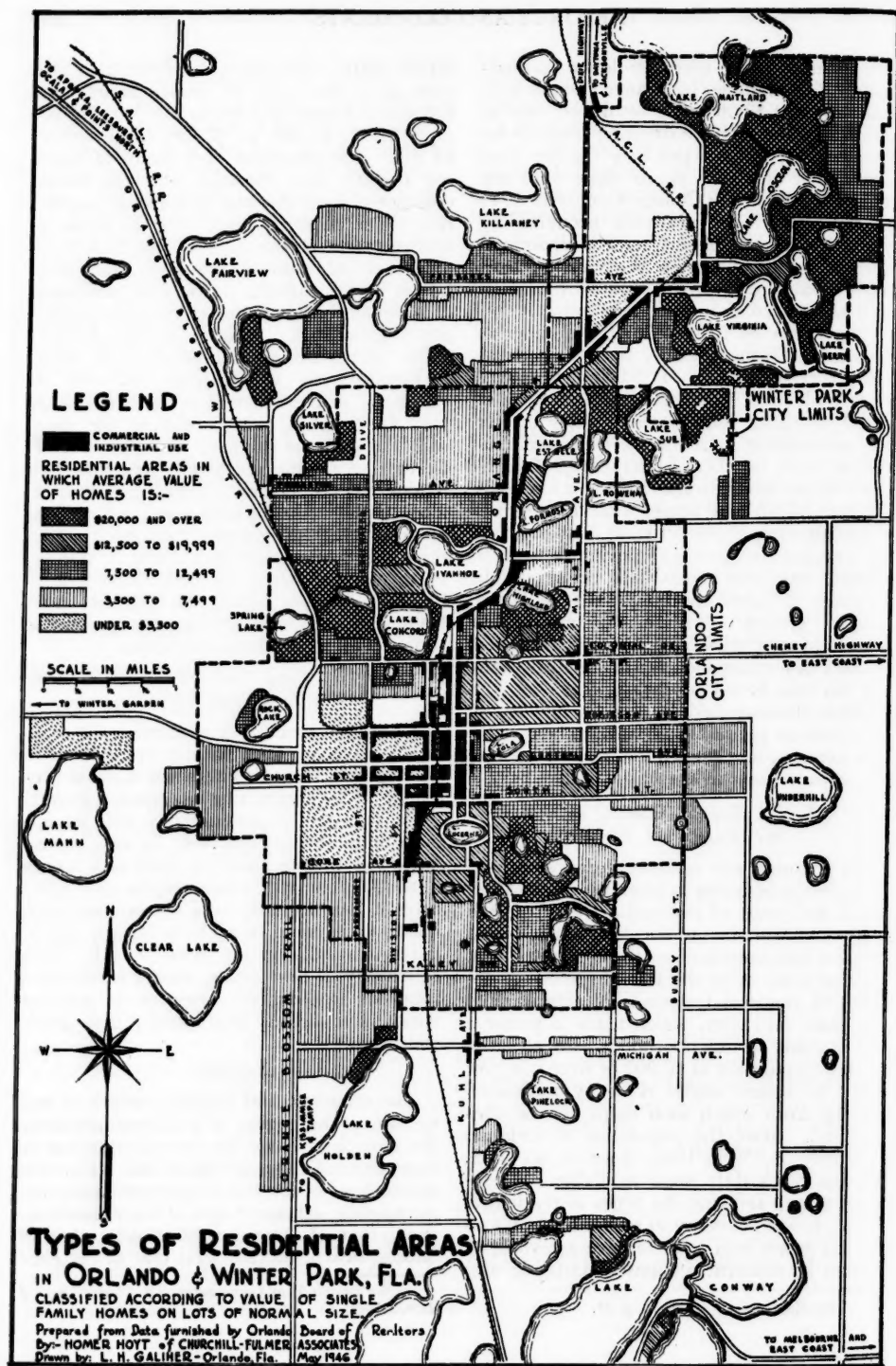
A survey was made to determine the total supply of vacant land suitable for residential development located within ten miles of Orlando. After eliminating swamps and groves, there remained approximately 100 square miles or 64,000 acres suitable for new homes. Since the total demand for 5,000 new homes in the next ten years would require only 2,500 acres if half an acre were allowed for each home, there could be no basis for any speculative advances in lot prices on the basis of scarcity of home sites, except for favored locations fronting on lakes or in sections which have already established a high grade character.

Summary

The economic and housing analysis of any specific urban region is a unique problem. No two cities have the same proportion of basic economic supporting factors. The economic base of Detroit is predominantly the automobile industry;⁸ that of Gary, Indiana, steel; that of Akron, rubber tires; that of Miami Beach, tourists; and that of the New

⁷ See Hoyt, *op. cit.* Table 29, p. 24.

⁸ See Detroit Plan Commission, *The Economic Base of Detroit*, 1944.



the N

York region;⁹ manufacturing, finance, wholesale trade, transportation and entertainment, with manufacturing representing half the total. Sometimes, as in New York, there are so many diverse industries contributing to the basic support that many volumes would be required to present in detail their trends and prospects. The Orlando region has chiefly an agricultural base and that base is chiefly the citrus crops. It is from the growing, packing, canning, shipping and financing of orange, grapefruit and tangerine crops that Orlando derives most of its basic support. To evaluate Orlando's future, it is necessary to measure the trends in the national consumption of citrus fruits, which involves rates of population growth, trends in national income, consumer preference, competition of other fruits, improvement in quality, citrus advertising and it also involves the question of the growing supply coming on from young non-bearing groves already planted in Florida and the competing supply of oranges in California and of grapefruit in Texas and Arizona. Involved in the ramifications of the problem are likewise factors affecting the net return to the grower, such as the increase in freight rates, the C.I.O. organization of citrus pickers, the control of shipments by the citrus commission, the cost of fertilizers and the problem of securing natural nitrates from Chile. The hazards of weather must be considered, as well as the perils of freezes, drouths, hurricanes, and unseasonable heat in the fall and winter. A rise or fall in the national income or in the yield produce even sharper fluctuations in the grower's income, because he is the residual claimant.

An economic survey of a national crop or industry which is necessary to give the answers on the economic base of one community will be useful material for a study of any other urban region depending in whole or part on the same crop or industry. The survey of Orlando provides a basic background for the entire Central Florida citrus industry and it also presents data that have a bearing on the economic case of California or Texas citrus communities. While sharing in basic surveys, however, each community represents a unique combination of basic economic factors which must be analyzed individually. Each state and community likewise has its own local data, its state agricultural department

data, its local building permits, data on local telephones, water meters and its own private statisticians or real estate men who have lived on the scene and can supply invaluable local background.

There is much need for improvement in local family income data and it is to be hoped that the U. S. Census and the U. S. Department of Labor will conduct sample surveys to establish bench marks on the income distribution of cities and counties. The techniques used in this study in estimating employment, population growth, and future income are intended to indicate a logical sequence of procedure. The analysis of the economic base is used to determine future basic employment, basic employment is taken to estimate future total employment, future total employment is the basis of estimating future population, from future population is derived the future total number of families, the future number of families is broken down into the number in each income group, the number in each income group determines the demand for new housing or the requirements for subsidized housing when it is measured against the existing supply of houses. Finally, from the total number of new houses, the ground area needed for the new dwellings may be estimated and that may be compared with the supply of vacant land suitable for residential development that is within easy transportation access of places of employment. In selecting areas suitable for new communities, it is important that a map be prepared showing the region's existing housing pattern or the location of its high- and low-rent residential areas, as well as its industrial and commercial districts, so that the new homes will be located in an environment that will be harmonious and not subject to change as a result of proximity to or encroachment of radically different types of uses.

The main objective of this article is to indicate a method of approach and to outline a logical sequence of steps in the analysis. There may be differences in opinion as to any estimates of the future, but it is believed that the tools here outlined will be more accurate and have a sharper cutting edge when data on income distribution and annual population changes for small communities are collected and when more basic economic studies of specific local regions are made available for comparison.

HOMER HOYT

New York City

⁹ See Regional Plan Association, *The Economic Status of the New York Metropolitan Region in 1944*.

Focus for Urban Planning

CITY planning has this year completed four decades as an officially constituted municipal activity in the United States. Gradual progress has been made until today the existence of several thousand zoning and planning bodies throughout the nation reflects the increasing recognition of the role of the planning process in municipal affairs. Town planning literature and research are expanding, and a growing number of universities are offering educational programs in this activity now recognized as a worthwhile endeavor, as a field of particular knowledge and as an occupation.

Despite this important progress, it is also evident that effective city planning is still more idea than reality. Measured by the budgets and staffs available, its importance as an active process is much less than the numerical total of the existing planning or zoning agencies might suggest. Of necessity or because of a misinterpretation of function, so-called town planning is in most instances absorbed in details of zoning—not in comprehensive programs of community betterment. To a large extent, the legal framework serves mainly to minimize outstanding abuses and does not implement positive planning.

The most tangible evidence of the ineffectiveness of city planning in the United States is found in the continued absence of a significant alleviation of urban disorganization, and in the all-too-familiar formlessness of most of the new residential areas springing up as a result of the housing shortage. A comparative examination of the programs of urban improvement upon which England is embarked emphasizes sharply the weakness of the American counterpart.

City planning is certainly not functioning on all cylinders. Its developed horsepower is far less than either its rated or potential horsepower, and many of its parts are so frozen that the output is low indeed. As might be expected, there are restrictions to progress both within and without the field. On the one hand, the engine is braked by the lack of an adequate organization and synthesis of the existing knowledge concerning the mechanism; on the other hand, the state of the environmental chassis in which it is installed prevents acceleration.

It is clear that no endeavor comprising the basic elements of people, movement, land,

and structures can be disassociated from its socio-economic and political context. In a democracy, town planning is directly or indirectly dependent on the attitudes and will of the majority for its acceptance and growth, and on government as the means of instrumentation. Urban planning has its roots in the complex of American life; as an institutional process it should be synonymous with enlightened municipal government.

Although both are parts of the same overall effort, there persists a conceptual distinction and functional separation between the work of most planning boards and the accepted duties of urban government. Town administrations are accustomed to regard their responsibilities for organized forethought in a very limited sense; planning commissions are prone to consider their activities as professionally or politically exclusive. Actually, each is so intimately joined to the other that progress in city planning cannot be divorced from the quality of municipal government, which in turn as it develops will "marry" the planning process in fact if not in name.

Not only does effectual town planning in the United States depend on the gradual development and improvement of urban government, but it requires the support of majority approval. Certainly, no significant reordering including industrial and commercial relocation, considerable shifts in land utilization, or adequate changes in coverage and density are possible without the tools supplied by popular affirmation. Not even repetition of the acknowledged mistakes of yesterday can be avoided without the firmer support of existing restraints.

The nation is politically undecided in its attitude toward the idea of planning—unsure whether its acceptance symbolizes the "road to serfdom," or its denial the "road to reaction." More specifically, there is indecision between the advantages of urban betterment through organized forethought *versus* the desire for personal prerogatives without those restrictions designed for the benefit of the community as a whole and required for more than palliative improvement.

At one extreme are those who decry any but "rock bottom" limitations to individual action; at the other are those who advocate a highly controlled society. To persons in favor of the first of these possibilities, the very

term *planning* is anathema, replete with "undemocratic" connotations at best or equivalent to "communism" at its worst. Proponents of the latter course focus on planned action as a cure-all in itself, frequently without either the clarification of objectives or resolution of procedure which are the substance of planning and important determinants of the American "way of life."

Because so few people are acquainted with the idea, objectives, or instruments of town planning—except those more or less directly concerned professionally—an extensive educational effort is essential. The information required for opinions of more than limited significance and prerequisite to an expression of majority desire has not been made available to the public. As a consequence, the attitude of the majority is unformed and unspoken. More widespread explanation and more numerous demonstrations for the eye to see and the hand to touch are sorely needed. "What is known about urban planning and redevelopment is only important when it is put to active use . . . , and this cannot be done unless John Q. Public, the yes-and-no man, shares the knowledge, understands it, believes it can benefit him and demands its use."¹

The task of providing information and developing understanding has hardly begun; efforts in this direction have been limited in extent and method. It is a monumental and long-range task, but it is also one of the "next steps," too long delayed. Channels of dissemination are available and communication with many minds was never more possible; demonstration in three dimensions is technically feasible. The alternatives are to rely on the urgent mandate of crisis or to await eventual change.

Needless to say, it is vital that the idea and the process are presented in such a manner as to avoid insofar as possible the meaningless bias too commonly associated with the label of planning, and to give clearer explanation of aims and methods than is often provided. The matter is equally the concern of the different income and educational groups, the silent many as well as the more vociferous few. It is the conviction of our society that the American people collectively possess sound judgment; the information required for the exercise of this discretion must be supplied before there can be gradual

urban reorganization in space as well as on paper.

Those who are concerned with or interested in the improvement of cities must provide the concerted effort and the special knowledge. This includes a substantial company: planners, political scientists and public administrators, economists, sociologists, engineers, architects, geographers, landscape architects, and a wide variety of persons less readily categorized. If progress is to be made, an organizational nucleus is needed as a stimulus—some form of national council representing at first the different associations and professional societies involved. Purposeful cooperation is as important to a more widespread presentation and explanation of town planning as it is essential to its effectuation in the future.

Such a council would reflect the prestige and influence of the various member organizations, and should acquire the affiliation and support of "consumer" groups which have an important stake in the quality of urban environment. Not the least of these is labor.

It is possible that the political climate in the immediate future may be less receptive than it has been in the past, but it is also clear that those forces on which the ultimate acceptance of active town planning depends are quite independent of short-range political fluctuations.

Together with the need for centrifugal effort directed toward the body politic, there is necessity for a centripetal integration of knowledge within the field. City planning will be accepted in the forum according to its intrinsic validity. For it to be found wanting means a quick trip to the showers and a serious loss of confidence.

No longer is urban planning characterized by illogical overemphasis of the physical components, without due regard for the matrix of economic, social, governmental, geographical, and historical considerations. Architecture, engineering, and landscape architecture have joined as partners in the cooperative of disciplines perforce involved in urbanism. The topical range of present-day literature pertaining to municipal planning exemplifies the expanded scope of the field as it is comprehended today. More and more, it deals with the core as well as surface aspects of the organism, with imponderables as well as ponderables.

¹Clark S. Hobbs, letter (1940).

This concept of city planning as a partnership of many areas of knowledge foreshadows greater realization, but the resolution of the complexities which have been added in this more inclusive view has just begun. Until more is accomplished in this direction, the field must rely in too many cases on conviction in lieu of evidence.

What is needed first is a deliberate organization and synthesis of existing research and experience relating to town planning, with the objective of developing a corpus of substantive knowledge. The field will have greater inward strength and outward influence when this framework of understanding provides a better balance of the science of knowing with the art of doing. At the same time there would be a clarification of those aspects calling for research emphasis.

There is necessity for an active and continuing group, composed of the best minds in the various intellectual sectors comprising city planning, to collect and combine knowledge, to coordinate insofar as possible research throughout the nation, and to stimulate further exploration. A special committee on urban research might logically be an outstanding element of a national city planning council. The value of group investigation—with the stimulus of diverse appraisal and the cross-fertilization of ideas—is widely recognized and practiced in many lines. Although oriented more closely toward discussion of urban problems than remedial methodology, the work of the Urbanism Committee of the National Resources Committee ten years ago is a lonely landmark of this type of joint effort in American town planning.

The store of ideas and information in the minds of persons engaged in various phases of municipal planning and in related activities can be tapped and fused into a whole greater

than the sum of isolated parts. Individual investigation would profit by encouragement and systematized contact through such a clearing house. By means of some "switchboard" mechanism, interconnection could be maintained between separate endeavors; to each could be made available pertinent information and thought, contributing at the same time to the individual product and the sum of intelligence.

In time city planning will emerge as a science, but its very nature demands integrated action if the methodological stem prerequisite to this status is to be acquired. It is unlikely that this can be achieved without deliberate organization; certainly, confidence cannot be placed on the probability of comprehensive results by a single individual, or by a well-timed form of intellectual spontaneous combustion among many.

Admittedly, the accomplishment of these ends is far from easy; cooperative action is never readily attained. But the stresses and strains of urban disorganization are not apt to be alleviated by happenstance. Leadership is the joint responsibility of the professions which compose the core of advocacy for municipal planning. Real progress will be delayed unless this responsibility is accepted and acted upon in one way or another. Should a federal agency specifically concerned with cities be established some day, a non-governmental body will still be needed as a parallel force or constructive counter-balance. Ultimate reliance can only be placed on the worth and power of the idea and the soundness of city planning knowledge, but these will not be realized in the foreseeable future without coordinated effort.

MELVILLE C. BRANCH, JR.

Harvard University.

Public Utility Financing in the First Quarter of 1947

PUBLIC utility security offerings totaled \$450 millions during the first quarter of 1947. This marked a decrease of \$199 millions over the total for the fourth quarter of 1946. The total offerings of \$450 millions for the first quarter of 1947 are the highest total offerings recorded for the first quarter of any year during the past ten years. Approximately three-fourths of the total offerings for the quarter were offered in March.

The public utility long-term debt issues sold publicly are shown in Table I. The \$200 million American Telephone and Telegraph Company 2¾'s of 1982 offered in March at 100.75% of par to yield 2.72% was the largest issue during the quarter. The \$100 million Consolidated Edison Company of New York, Inc. 2¾'s of 1982 offered in March at 102.85% of par to yield 2.63% was the second largest issue offered during the

TABLE I. SUMMARY AND ANALYSIS OF PUBLIC UTILITY LONG-TERM DEBT ISSUES OFFERED PUBLICLY, FIRST QUARTER, 1947

Company and Issue (A)	Coupon Rate (B)	Principal Amount (C)	Ma- turity Date (D)	Month of Offering (E)	Offering Price (F)	Offer- ing Yield (G)	Under- writers' Com- missions (H)	Pro- ceeds to Com- pany (I)	Esti- mated Incen- dental Expenses (J)	Net Pro- ceeds (K)	Cost to Com- pany (L)
	%	\$			%	%	%	%	%	%	%
American Telephone & Telegraph Co. Convertible Debentures.....	2½	12,900,000	1961	January	117.65	1.42	.003	117.647	1	1	1
Kingfisher Water Company First Mortgage.....	4	85,000	1959	January	100.00	4.00	1	1	1	1	1
New York State Electric & Gas Corp. First Mortgage.....	2½	13,000,000	1977	January	102.875	2.62	.61	102.265	.14	102.125	2.65
American Telephone & Telegraph Co. Debentures.....	2½	200,000,000	1982	March	100.75	2.72	.45	100.30	.003	100.297	2.74
Citizen Utility Company First Mortgage.....	3½	4,500,000	1972	March	103.00	3.31	1	1	1	1	1
Consolidated Edison Co. of New York, Inc. First and Refunding Mortgage.....	2½	100,000,000	1982	March	102.85	2.63	.53	102.32	1	1	1
Southern Counties Gas Company First Mortgage.....	3	6,000,000	1977	March	107.50	2.64	1	1	1	1	1
Total or Weighted Average.....		336,485,000			102.25	2.65	.47*	101.68*	.003*	100.41*	2.73*

* Information not available.

* Exclusive of issues for which information is not available.

TABLE II. SUMMARY AND ANALYSIS OF PUBLIC UTILITY LONG-TERM DEBT ISSUES OFFERED PRIVATELY, FIRST QUARTER, 1947

Company and Issue (A)	Coupon Rate (B)	Principal Amount (C)	Maturity Date (D)	Month of Offering (E)	Offering Price (F)	Offering Yield (G)
	%	\$			%	%
Central Ohio Light & Power Company First Mortgage.....	2-¾	4,100,000	1977	January	a	a
Coast Counties Gas & Electric Company First Mortgage.....	2-¾	900,000	a	January	99.013	a
Idaho Power Company First Mortgage.....	2-¾	5,000,000	1977	January	100.50	2.73
Indiana Gas & Water Company First Mortgage.....	3	900,000	1972	January	a	a
Southwestern Public Service Company First Mortgage.....	2-¾	3,500,000	1972	January	a	a
California Water & Telephone Co. Mortgage.....	2-¾	1,000,000	1971	February	a	a
Hartford (Conn.) Gas Company First Mortgage.....	2-5/8	2,000,000	1972	February	100.00	2.61
Inter Mountain Telephone Company First Mortgage.....	3	400,000	1976	February	a	a
Carolina Telephone & Telegraph Co. Debentures.....	2-¾	3,000,000	1977	March	a	a
International Telephone & Telegraph Co. Sinking Fund Debentures.....	3	2,300,000	1961	March	a	a
New England Gas & Electric Ass'n. Sinking Fund Collateral Trust.....	2-¾	22,425,000	1967	March	100.005	2.87
New Haven Gas Light Company First Mortgage.....	2-5/8	2,000,000	1972	March	100.00	2.62
Texas Public Service Company First Mortgage.....	3	2,600,000	1972	March	a	a
Total or Weighted Average.....		50,125,000			100.05b	2.81b

a Information not available.

b Exclusive of issues for which information is not available.

TABLE III. SUMMARY AND ANALYSIS OF PUBLIC UTILITY PREFERRED STOCK ISSUES OFFERED, FIRST QUARTER, 1947

Company and Issue (A)	Dividend (B)	Principal Amount (C)	Month of Offering (D)	Offering Price (E)	Offering Yield (F)
	%	\$		\$	%
Birmingham Electric Company (Par \$100).....	4.20	4,547,800	January	100.00	4.20
North Pittsburgh Telephone Co. (Par \$100).....	4.50	200,000	January	100.00	4.50
Seymour Water Company (Par \$25).....	5.00	180,000	January	26.50	4.72
New York State Elec. & Gas Corp. (Par \$100).....	3.75	15,000,000	February	102.00	3.68
Northwestern Public Service Co. (Par \$100).....	4.50	2,600,000	February	107.00	4.21
Southwestern Associated Tel. Co. (No Par).....	2.20	1,600,000	February	50.00	4.40
Southwestern Public Service Co. (Par \$100).....	3.90	2,000,000	February	102.00	3.82
Tide Water Power Company (Par \$100).....	4.25	1,000,000	February	a	a
Delaware Power & Light Co. (Par \$100).....	3.70	5,000,000	March	102.77	3.60
Total or Weighted Average.....		32,127,800			3.84b

a Information not available.

b Exclusive of issues for which information is not available.

first quarter. These two issues comprise about ninety per cent of the total offering during the quarter of \$336 millions.

The American Telephone and Telegraph Company $2\frac{3}{4}\%$ convertible debentures of 1961 offered in January at an average price of 117.65% of par had the lowest offering yield of 1.42%. This issue represents the unsubscribed portion of the \$350 million issue offered through rights in the last quarter of 1946. Historically both the \$13 million New York State Electric and Gas Corporation $2\frac{3}{4}\%$ s of 1977 and the American Telephone and Telegraph Company $2\frac{3}{4}\%$ s of 1982 have

low cost to company percentages of 2.65% and 2.74% respectively.

The weighted average offering yield of 2.65% is the lowest recorded during the past ten years except for the second quarter of 1946 which had a low average of 2.62%. The weighted average for the underwriters' commissions was .47% which marks another low average for the past ten years. The very low cost of the underwriters' commissions for the American Telephone and Telegraph Company issues carries a heavy weight in the average.

A summary and analysis of public utility

TABLE IV. PUBLIC UTILITY COMMON STOCKS OFFERED DURING THE FIRST QUARTER, 1947

Company (A)	Principal Amount (B)	Month of Offering (C)	Offering Price (D)
	\$		\$
Central & South West Corp.—(Par \$5).....	16,106,304	January	12.00
Birmingham Gas Company—(Par \$2).....	364,072	February	8.00
Inter-Mountain Telephone Co.—(Par \$10).....	475,000	February	10.00
Pacific Telephone & Telegraph Co.—(Par \$100).....	4,233,700	February	100.00
San Jose Water Works—(Par \$25).....	1,335,000	February	44.50
Central Electric & Gas Company—(Par \$1).....	1,187,500	March	9.50
Oklahoma Gas & Electric Company—(Par \$20).....	5,530,000	March	39.50
Southwestern Public Service Company—(Par \$1).....	2,223,111	March	34.50
Total.....	31,454,687		

long-term debt issues offered privately during the first quarter of 1947 is given in Table II. The thirteen issues offered privately in the first quarter totaled \$50 millions. The \$22 million New England Gas and Electric Association 2 $\frac{7}{8}$'s of 1967 offered in March at 100.005% of par to yield 2.87% was the largest issue offered during the quarter. The \$2 million Hartford (Conn.) Gas Company 2 $\frac{5}{8}$'s of 1972 sold in February at 100% of par to yield 2.61%. The New England Gas and Electric Association 2 $\frac{7}{8}$'s of 1967 had the highest yield of 2.87%. The weighted average offering yield for the issues for which information is available is 2.81% which is lower than the 2.88% recorded for the fourth quarter of 1946. It is difficult to make a comprehensive study of privately-offered securities because very little information is available. The prospectuses of the privately-sold issues are not made public.

Table III gives a summary and analysis of public utility preferred stock issues offered during the first quarter of 1947. Nine issues of preferred stock totaling \$32 millions was offered in the first quarter of 1947. The \$15

million New York State Electric and Gas Corporation par \$100 offered at \$102.00 to yield 3.68% was the largest issue offered. The \$5 million Delaware Power and Light Company par \$100 issue offered at \$102.77 had the lowest yield of 3.60%. The weighted average offering yield was 3.84%.

A compilation of public utility common stock issues offered during the first quarter of 1947 is given in Table IV. Eight issues offered during the quarter totaled \$315 millions which represents an increase over the fourth quarter of 1946 total of \$226 millions. The \$16 million Central and South West Corporation par \$5 offered in January at \$12.00 was the largest issue offered in the first quarter.

One issue of serial notes was offered during the first quarter. This was the \$125,000 Dedham and Hyde Park Gas Company 3 $\frac{1}{2}$'s offered in January at \$102.25 due serially until 1961. This issue was sold privately to an insurance company.

HAROLD L. MILLER

Wisconsin Telephone Company

Book Reviews



Your City Tomorrow. By Guy Greer. New York: The Macmillan Co., 1947. pp. xl, 206. \$2.50.

In *Your City Tomorrow* Guy Greer summarizes what he has learned in the last seven years of energetic publicizing on city planning and development. His report is addressed to the citizen who would participate in city planning and who has not had Greer's rich experience and valuable personal and intellectual contact with Alvin Hansen at the Federal Reserve Board, Sergei Grimm at Syracuse, Wilson Wyatt of Louisville, Carl Friedrich (misspelled as "Friedrichs" in text and index) and associates of Harvard and the Boston prize contest, Brooke Alexander and the others of *Fortune Magazine*, not to mention his former FHA colleagues and many others.

The outline of the book is logical, but it serves best to show in order the steps by which Greer has thought through the problems of the ever-renewing city. Most of the book, of course, appeared as articles in *Fortune Magazine* in 1943 and 1944. His excellent qualities as a reporter and interpreter of current activity are displayed in lucid description and easy mastery of the events of 1939-1944. Clearly he has shown a "nose for the big news" in choosing to describe the controversies surrounding the public works programs of the Thirties, the United States Housing Authority, the Syracuse-Onondaga Postwar Planning Council, Robert Moses of New York City *vs.* the planners, the Louisville planning program, the state redevelopment laws, the new home rule campaign (this time for taxes), and the Boston prize contest in city planning.

The weakness of the book as reporting lies in the passage of time since the last installment. The Wagner-Ellender-Taft Bill which has been fought over in one form or another for two and a half years is here described as a dim mirage on the horizon; Wilson Wyatt's Veteran Emergency Housing Program is painted as a hope, not as a scuttled rowboat; house-building costs are still solemnly quoted

at \$4,000. The ferment in Chicago planning is not mentioned, and no glimmer of the ephemerally improved situation shows through his gloom when he mentions municipal finance. This book should have been published two years ago.

One offsetting advantage in delay may lie in added time for meditation and reconsideration (although publishing delay may explain the mis-timing). Chapter V, in spite of its cryptic title "Common Sense to Cases," is a good example, (marred only by a rather slavish illustrated generalization from the Syracuse downtown city plan).¹

Special interest of readers of the *Journal* will attach to Chapter VI, "Tackling the Blight Problem" and to Chapter III on "Better Housing" in which he advocates a goal of 600,000 new dwelling units a year built by unaided private enterprise, and 400,000 to 600,000 built with public aid. While there will be disagreement with some of his points, he should receive an ovation for making clear that the payment of too much for over-valued land "would not constitute new investment" and that proposals to issue tax exempt bonds for this purpose "would use up precisely the kind of money that the national economy must largely depend on for new investment."

Chapters IX and X attempt to get down to brass taxes on public participation. The new inventions for citizen participation in city planning as mentioned by Greer are the radio program, "Syracuse on Trial," and the prize contest among citizens plans for a city. But surely there is little staying power in a one-shot prize contest. It is important mainly as a source of ideas and as a way to launch a renaissance in city planning. The key attraction in that excellent radio program, "Syracuse on Trial," was controversy. The people are starving for the drama of public controversy which used to be easily available at the county court house and also at the City Hall. The "real thing" can have all

¹ While on the subject of illustrations, I cannot forbear amused and sympathetic comment on the ironic illustration, "The City Beautiful," where the automobiles even travel on the wrong side of the street!

that "Syracuse on Trial" had, with the additional excitement of suspense concerning the real outcome. (But it will take even more work than the writing and performance of a radio script!)

Greer neglects the question of participation of public servants of all departments, that is of the bureaucracy—which Friedrich has called "the core of modern government." How is their loyalty to the comprehensive planning program to be cultivated and made routine action?

Private decisions made within the broad outlines set by public regulation largely determine the nature of a modern city. How is consideration of the public propriety of such private acts to be encouraged? Under what circumstances is such consideration to be expected of each individual by his own kind of people? Greer must have bumped into these questions. As he begins to find some answers to them we may hope that his lucid pen will carry on from here.

GEORGE S. DUGGAR

University of Wisconsin



Fundamentals of Real Estate Practice. By Harry Grant Atkinson and L. E. Frailey. New York: Prentice-Hall, Inc., 1946. pp. 445. \$7.50.

Fundamentals of Real Estate Practice in its present form is a series of twenty-one separately bound chapters together with a table of contents and an appendix. It is the result of an effort by the National Association of Real Estate Boards in 1939 to publish for the exclusive use of its Member Boards a text for evening classes attended by realtors and their employees. The material, therefore, in 1946 has passed the test of several years of usage. In this respect it is different from many original editions, because many of the inconsistencies, shortcomings, et cetera, have been eliminated.

This book is one of the finest contributions to real estate practice that your reviewer has had the pleasure to read. There are ample reasons why this should be so. One of the authors, namely, Harry Grant Atkinson, was for many years Director of Activities of the National Association of Real Estate Boards. In this capacity he directed and motivated

the materials to be used in the educational program of the various institutes and divisions of the National Association. He therefore had access to the very latest and best thoughts of successful real estate men in the field.

Mr. Frailey, a skillful writer has taken this vast storehouse of material and presented it in a form which is easy to read and readily understood. In addition to explaining the nature of real estate, portraying neighborhood and city growth, and enunciating the principles of land utilization, he has covered the five principal phases of real estate practice, namely, valuation, management, brokerage, finance, and home building from the practitioner's point of view with unusual emphasis on his relationship with people. It is this style that makes the book most interesting. The reactions of those who use the services of real estate practitioners are most helpful to the real estate man. A successful business man continues his success because he pleases those for whom he works. This text, *Fundamentals of Real Estate Practice*, makes a contribution because it approaches the subject from the peoples' point of view.

The phases begin with valuation and, after defining the nature of real estate value at length, the three approaches to value are described in detail. These approaches are in accordance with the best accepted practice in the field and are those taught by the American Institute of Real Estate Appraisers. The approaches are followed by a chapter on "Correlation and the Final Estimate of Value" which is stimulating enough to make anyone interested in appraising the value of real estate look for further light.

The next important phase, namely, management, is handled in 90 pages of well-written material consisting of 6 chapters. Starting with the functions of management it carries one through the management program, followed by the developing and maintaining of income and concludes with an excellent chapter on "The Executive Control of Real Property."

The phase of the text covering real estate brokerage is in your reviewer's opinion the highlight of the treatise. Starting with "The Functions and Equipment of the Real Estate Broker," it runs the entire gamut of this field of endeavor including listings, securing prospects, showing property, and making the sale. Any real estate broker who has not read these chapters should do so at the first opportunity.

There can be no question that he will pick up some practical suggestions, give better service, and of course will make more money.

The phase of the real estate business which has to do with "Real Estate Finance" is handled in one short chapter. While this is perhaps adequate it is a bit too brief to cover the subject as well as were the foregoing three phases. Perhaps this was done advisedly because many of the real estate men are only indirectly concerned with the financing of real estate.

The fifth and last phase of the real estate business discussed in this text is "Home Building." This, like real estate finance, is handled briefly and from some points of view perhaps inadequately. This again may have been planned that way because of the many technical aspects of the subject with which most real estate men are not too much concerned.

The final chapter, namely, "Professional Standards," is no doubt a personal contribution by Harry Grant Atkinson, who for many years has been interested in the professionalization of some of the phases of the real estate business. His many years of study of this subject are embodied in this work which to say the least is challenging, if not inspiring.

Fundamentals of Real Estate Practice is entirely devoid of any legal aspects of the business. This is refreshing because too many of the texts on this subject do emphasize the legal aspects. They may be helpful in certain states and localities but actually harmful in others. State laws, customs, and practices are so different from state to state that legal considerations in a text which may have national distribution are ill-advised. What has been said about the legal aspects can also be said of the various legal forms, listing blanks, contracts, et cetera, which may have their place in certain territories, but if copied may be entirely wrong in others.

At the end of each chapter there is a number of selected readings to help those who are interested in finding additional information. In addition, one finds a number of questions for discussion. These questions should be very helpful to teachers who want to use the text in their classrooms. All in all, *Fundamentals of Real Estate Practice* is a first-class piece of work designed to cover the practice in every locality and also to meet the requirements as a text in educational institutions. It is written from the proper point of

view, is concise, and embodies the best practices extant in the United States today.

H. O. WALTHER

Chicago, Illinois



Green-belt Cities: The British Contribution. By F. J. Osborn. London: Faber & Faber, Ltd., 1946. pp. 191. 12/6 net.

The interest currently focused on Britain's daring New Towns adventure makes this little book a timely one. In it we have a re-statement of Ebenezer Howard's Garden City idea, and a valuable analysis of how it has worked out in the life of England's two Garden cities—Letchworth and Welwyn.

Letchworth is 43 years old now, Welwyn 27, so both of them are mature enough to warrant the drawing of many conclusions.

To be sure, Osborn's critique is far from objective. He is an all-out disciple of Howard. He helped build both cities, and has lived in both for years. However, his intimate relationship fits him uniquely to transmit the lessons learned from experience. And he has done his utmost to make clear the failures and weaknesses as well as the achievements.

The result is a manual which contains invaluable practical hints to planners and administrators on pitfalls to be avoided. It is particularly worthwhile in its emphasis on the "human element" which must constantly be taken into consideration if the finest paper plans and principles are not to go astray.

Osborn's book is divided into a revaluation of the Garden City movement, an examination of the two "working models," and speculation on the future of Green-belt cities. An appendix traces the origin of the Green-belt principle back to ancient times.

Osborn seeks to show that the building of new towns is not an evasion of the problem of making the most of existing cities, but is indispensable to the solution of that problem.

He admits that Letchworth and Welwyn have not grown in accordance with the hopes of the founders. He blames the lack of sufficient capital as the chief handicap. His conclusions will make interesting comparison with those drawn by less friendly observers. Certainly Howard's long-dormant dream

would appear to be receiving spectacular "vindication" in the British postwar program now gathering momentum.

Some implications will be disturbing to many American readers—especially the sweeping and minute public control of the physical pattern which has been felt necessary in the two British communities. Nonetheless, this country's comprehensive zoning and land-use control movement appears to be heading inevitably in the same direction. It is hard to see how increasing restraints can be avoided, if the social interest is to be protected.

Most of Osborn's little book is easy, down-to-earth reading. He deplores this fact. Howard's *Garden Cities of Tomorrow* has not been read in academic circles, he comments, because it is too easy to read. "It was sheer bad luck," he observes, "that Howard had no follower who could clothe his creative ideas in the difficult language that trained minds understand." (p. 25).

Here is a back-handed slap, not only at the long snubbing of Howard by the "experts," but at the weakness of so much current academic writing on planning and other social problems. Too many of our clearest thinkers neglect utterly the translation of their "Alpha Betas" into the A-B-C's that the ordinary man can understand.

Until social scientists learn how to do that job more successfully, they cannot hope to make their work fully effective.

GEORGE MCCULLOCH

University of Wisconsin



Farm Business Management. By R. H. Hare. Toronto, Canada: The Ryerson Press, 1946. pp. 442. \$3.50.

Drawing heavily upon his wealth of experience as agricultural representative, research and extension worker in farm management throughout Canada, Mr. Hare has produced a well-documented and usable book. Mr. Hare's definition of farm business management summarizes his treatment of the subject: "As a study, farm business aims to analyze the records of farm businesses to learn the scientific findings and business principles which when employed in the operation of an

individual farm will result in obtaining the greatest possible long-time net profits." Clarifying the book title, he states that farm business and farm management are synonymous terms.

The book's principal contribution is in its detailed illustration of principles, business analysis procedures, and accounting techniques with well-selected data from hundreds of Canadian farm businesses. In only three or four cases was it necessary to use data from non-Canadian sources to illustrate the points made. After studying the 110 tables which support the discussion of the above subjects, one must conclude that farm management research in Canada has made real progress.

Teachers and research workers in the field of farm management will find little in the discussion of principles and techniques which is new to them. But Mr. Hare does treat the field in a comprehensive and uncontroversial manner. The completeness of his treatment is evidenced by the fact that his 20 chapters treat subjects from types of farming through individual farm organization and business analysis to prices, marketing, information sources, and community services.

Mr. Hare's philosophy of management is summarized in his statement, "... the individual farmer's greater hope of improving conditions for himself by personal effort, lies in improved management programmes whereby his production costs may be reduced." In order to achieve this goal, many farmers will have to give increasing attention to *how* farm jobs are done (farm practice) as well as to *what* to do (farm business). Somewhat more specific suggestions on equipment, buildings, layout, and work methods would have improved Mr. Hare's treatment of cost reduction and efficiency of production.

In his preface, Mr. Hare explains that his book is designed as a Canadian text. In line with that objective, questions and suggested laboratory exercises follow each chapter. *Farm Business Management* should be a real aid to the teacher and the serious student for it combines within one cover the sound principles of farm organization and management gleaned from some 40 years of research in the area. And probably best of all, these principles and techniques are carefully adapted and skillfully illustrated in terms of Canadian Agriculture.

LOWELL S. HARDIN

Purdue University

Editor's Page

"Where Every Prospect Pleases"

To the editor's desk there come many items of varied interests. From the government of Ecuador the following document was received. It is printed here verbatim and without further comment.

THE Republic of Ecuador, in South America, announces its bid for colonists by opening up 124,000 acres of rich land for British and American colonization. Every settler may obtain 124 acres of potential farm land, a townsite lot in one of two villages of the land concession located upon Ecuador's new, all-weather highway that links the concession with Quito, capital city of the republic, and will soon link the colony with the port city of Esmeraldas on the Pacific coast. Married men, or heads of families, may have twice as much land, 248 acres.

Although crossed by the equator, this area of Ecuador enjoys a salubrious climate due to the cold antarctic Humboldt current which sweeps close inshore as it flows north past this part of the country. The nearness of the snow-capped mountains in the central cordillera, also tends to create a climate that is ideal and with no extremes of either heat or cold in spite of the equatorial geographical location.

Soil experts state that the earth in this land concession is equal to that of Java, long recognized as the richest in the world. Java and Ecuador are about the same size, yet Java supports fifty million people while Ecuador's total population is a scant three million. Among the crops that thrive to perfection upon this land are: bananas, eleven different kinds, oranges, limes, lemons, the delicious and healthful papaya, pineapples, sugar cane, rice, breadfruit, coffee, cacao (chocolate) and a host of other tropical fruits, vegetables, and paying crops. The land is crossed by several streams and two rivers flow nearby. Natural wild rubber trees are scattered throughout the area.

The laws of Ecuador provide that settlers need pay no taxes on agricultural developments or land, for five years. And even after that, they would enjoy Ecuador's extremely

moderate taxes which are famous for their low rate, especially to agriculturists. Furthermore, the American and British settlers may retain their citizenship indefinitely.

A government-owned and operated hospital is located near the British-American concession and serves the settlers. Not far distant live the picturesque tribe of peaceful Colorados Indians whose womenfolk are noted for their beauty of face and grace of body.

Settlers are allowed to bring into Ecuador, with them, all of their personal effects, household goods and agricultural equipment free of all customs duty charges.

The language of Ecuador is Spanish, but many of the better educated Ecuadoreans speak English, and most of Ecuador's schools are teaching English, to the young people. During the late World War, Ecuador went all out to support the cause of the United Nations and much of the crude rubber and balsa wood, as well as vitally important quinine and other tropical crops that were desperately needed, came from Ecuador.

Top stands of magnificent tropical woods are to be found upon the land and settlers can use this for building purposes, selling the surplus at good local prices.

Under the same Presidential Decree that provides land in this concession for immigrant British and American settlers, a clause was included to make it possible for individuals to acquire land in the colony area as absentee owners. This clause enables business men or small syndicates to take over land here and have it operated for them, after it has been cleared and planted, as a commercial tropical crop and product investment. The absentee owner need not move to and live upon his land but can arrange to either have one of the resident settlers look after it or appoint an authorized representative to work it for him.



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